

## **Demographic Factors Influencing Senior Secondary School Students' Attitude towards Agriculture in Botswana**

**S. P. Baliyan\***

(Corresponding author)

*Department of Agricultural Economics, Education and Extension,  
Botswana College of Agriculture, University of Botswana, Gaborone, Botswana*

*E-mail: [spbaliyan@yahoo.com](mailto:spbaliyan@yahoo.com); [sbaliyan@bca.bw](mailto:sbaliyan@bca.bw)*

&

**H. J. Nenty**

*Department of Educational Foundations  
University of Botswana, Gaborone, Botswana*

*E-mail: [nentyhj@mopipi.ub.bw](mailto:nentyhj@mopipi.ub.bw)*

### **Abstract**

Values related to agriculture imbibed by our youths today may serve as impediments to future growth in agriculture in Botswana. Besides feeding the nation, agriculture contributes substantially to the country's economy. To avert any future problem in the agricultural sector, factors behind the current nonchalant attitude towards agriculture by Botswana youth must be identified and their effects remedied. Many of such factors are demographic, and this study is conducted to investigate the influence of demographic factors on senior secondary students' attitude towards agriculture in Botswana. Survey data collected, using a validated Likert-type questionnaire, from a sampled of 240 senior secondary students in Botswana were analyzed descriptively and inferentially to test for the influences of several demographic factors on students towards agriculture. Results indicated that several background variables namely: location of school, student's intention to or not to study agriculture, program in which student is currently enrolled, level of mother's education, level of family income and location of residence each has significant influence on the attitude of students towards agriculture. These findings were discussed and relevant recommendations were made to arrest the deteriorating attitude of Botswana youth towards agriculture.

**Key words:** Agriculture, agricultural education, prediction of attitude, demographic factors,  
Botswana

## Introduction and Background

Dwindling mineral resources and the fall in their prices is putting more pressure on governments across Africa to place more emphasis on the development of agriculture. But in Africa, people tend to “perceive agricultural work to be for rural people, non-educated people, people who are poor or aged or who do not really have any other option except to do farming work” (Anor, 2012, p.1). In Botswana

Students view agriculture differently depending on the family background. Most students had negative attitudes towards the subject. They view the subject as something that cannot open doors for them in the corporate world as agriculture related jobs are mostly based in the villages and are undermined. Agricultural careers are associated with the low income earners or disadvantaged communities and most of the students do not see themselves pursuing with the agriculture field. Apart from that, their role models (parents) are doing white collar jobs and therefore students do not have anyone to instil a sense of pride towards the subject. Even when a student performs well in the subject, that does not make him or her proud as they have a saying that it’s a subject for ‘bana ba ko gae’ (Lone, 2007, pp. 18-19).

Botswana Government has included agriculture as a subject in the schools because it is a pre-requisite to economic development. The teaching of agriculture in schools is aimed at developing a human resource base capable of improving agriculture production and stimulating economic growth in Botswana. The syllabus aims to impart to learners certain psychomotor, cognitive and affective skills, in their preparation for tertiary institutions and self-employment so as to be productive citizens of Botswana (Government of Botswana, 1994). The main aim of the senior secondary agriculture syllabus is to promote an appreciation of Agriculture as an Applied Science and to develop interest and awareness of existing problems and opportunities in Agriculture in the context of rural development.

The problem of poor interest in agriculture is not only observed among students but also among parents. It is mainly an attitudinal problem. Students do not want to enrol into agriculture rather they would prefer to enrol for other optional subjects such as business studies, art and design and technology and therefore the enrolment in agriculture in senior secondary schools in Botswana has been poor in the past years. It is evidenced that total enrolment of students in senior secondary schools in the country has increased by 56.59% in 2009 compared to 2001 whereas enrolment in agriculture increased only by 1.23 % (Botswana Educational Council, 2009 BGCSE Examination Summary of Results,).

The majority of parents in Botswana do not want their children to be enrolled for agriculture. The school administration, teaching fraternity also seems to have unfavourable attitude towards agriculture which might have affect the student's attitude towards agriculture. This negative self image has deeply affected their learning and motivation, and drives many of them to become both careless and problematic students or even leave school and become dropouts. Most students from agricultural education have low achievement and consequently contribute to the negative image about them. Mostly people including schools principals and teachers have mentioned the following characteristics of their students in vocational tracks: lazy, low achievement, unable to comprehend the subjects' material especially mathematics, careless, undisciplined, problematic, and having negative self- images. Agricultural education has suffered from the situation of being a second alternative for low achievement students.

The status of agricultural education is not well accepted in the society and one of the greatest problems facing agricultural education in Botswana today is attitudinal. Factors such as ambition of getting white collar jobs, cultural tradition, early childhood socialization, parental expectations, students ambition for further studies, the actual hard work involved in manual labour, the reward that go with it, the behaviour and attitude of teachers, influence the attitude the student acquire. The indigenious cultural radiation is one that holds in high esteem, hard work and productivity right from youth. The hard worker is usually rewarded in the community with chieftaincy titles, praises etc. However, it is hardly so today. Batswana culture has been mutilated and the child expects to have things done for him. The Botswana society today values riches, want white colour reputed jobs and thus, despise manual work. Parents therefore, expect their child to have the type of education that would bring riches within their reach without soiling their hands. The background factors may have influence on their attitude towards agriculture.

### **Literature Review**

Literature review has indicated various and different results on relationship between attitude and background variables. Some of the results contradict one another due to many reasons; among them are the differences in the instruments used to measure attitudes, sampling and the data collection procedures. It may also be due to the differences in the cultural and societal values in the different environments.

Sube (1981) found that the influence of parents and friends is of major importance for over 50 percent of young people in choosing a career, with parents' influence (about 34%) the decisive variable. Children of farmers are more inclined to choose a career and see social prospects in

agriculture than children with a different background. Rajput (1988) indicated that that gender and social setting have a minor effect on the attitude. Rossetti (1990) concluded that male students from a higher socio-economic status and in an academic curriculum had the most negative images of vocational education. Mothers were found to be the most influential in decisions not to enrol in vocational education, followed by friends, siblings, and teachers. The independent variables of gender, location, parents' level of education, and parents' jobs were tested in relation to attitudes toward vocational training, using a Likert-type scale. No significant relationships were found between the independent variables parental level of education and their jobs had no significant influence on the attitudes of their children toward vocational education (Ghanini 1994). Bergh (1987) carried out a study to describe the attitudes towards technology and investigate the possible influence of some background variables on the attitude towards technology. The independent variables were gender, parents' level of education, parents' professions, family situation, the use of toys in childhood, influence of parents on motivation for school, pupils' self-assessment and self-concept, and place of residence (rural or urban). He found that gender was the only independent variable that correlated significantly with the attitude.

### **The Problem, Purpose and Hypothesis for the Study**

Agricultural sector has been on priority list towards the diversification derive of mineral based economy. On the other hand, the dwindling number of secondary school students in Botswana who are willing and enrolled to read agriculture is a worrisome problem. While interest in food production is dwindling, the number of mouths to be fed is increasing. Currently, success at feeding the world is slim, but yet world's population keeps increasing, while the number of youths interested in agriculture is decreasing. Stereotype views of agriculture as a subject and of farming as a carrier abound. These, viewed together, constitute a serious issue of concern to government and the public.

Unwillingness of students in Botswana secondary schools to enrol in agriculture at school has been found to depend significantly on their attitude towards agriculture (Baliyan & Nenty, 2015). There are many variables or factors behind the formation of students' attitudes. Some of them have a direct relationship with students' attitudes, like parental influence, while others have an indirect relationship like societal attitudes. Fortunately, attitudes are not innate but are learned; what form they will take is not determined at birth or earlier but depends on the environment in which the child grows up and the treatment he or she receives (Evans, 1965; Macmillan, 1980). Nevertheless, the picture is still vague about the relative influence of each background variable on the attitude. No

study has been conducted to determine the influence of background factors on the attitude of secondary school students towards agriculture in Botswana hence the present study is an attempt to find out the extent to which demographic factors influence students' attitudes towards agricultural education in Botswana.

The main hypothesis for the study is that demographic factors: gender, location of school, student's intention, current enrolment, parental influence, mother's and father's level of education, level of family income, and level of past performance have significant influence students' attitude towards agriculture.

### **Methodology**

An exploratory survey research design was adopted for this quantitative study. The research design of this study is based on the model in which the background variables were independent variables or predictors, and student's attitude towards agriculture was the dependent variable. A survey design was employed to collect the relevant data as the survey is the best method to explore the facts. The target population consisted of agricultural and non agricultural subjects students studying at 30 Government senior secondary students in Botswana. Four senior secondary schools; two schools from rural area and, two schools from urban area; were selected randomly. Three strata namely, location of school (urban and rural), gender (male and female) and type of education (agriculture and non agricultural education) were considered as base for sampling. The sampling procedure, in this way, reduces random sampling error, since the demographic characteristics of the population on which stratification is based are known. In addition, stratification can ensure that each sub-division of the population is adequately represented in the sample (Stopher & Meyburg, 1979). Attitudinal disposition towards agriculture among students may be influenced by various demographic factors of the respondents. Borg and Gall (1983) and, Krejcie and Morgan (1970) stated that this type of sampling is often used in educational research and therefore, stratified random sampling was found appropriate. A sample of 240 students (n=240); 120 students from agricultural education and 120 students doing non agricultural education were randomly selected from the four sampled school.

The data were collected through a survey method using a validated and reliable questionnaire. The questionnaire as the data collection instrument was designed after an extensive review of literature on the demographic factors and attitude factors. The first part of the instrument was designed to obtain demographic information about the students. The background variable consists of eleven items namely gender, area of residence, location of school, mothers' level of

education, fathers' level of education, family income, Students' achievement at tenth grades, parents' preferences (as measured by what type of secondary education they want their children to join), students' ambitions as measured by their intention to continue their study at the university or not. The second part of the instrument measured the basic components of students' attitude towards agriculture (Agriculture Education Attitude Scale – AEAS) which included four categories of attitude items: knowledge items, cognitive evaluation items (beliefs), affective evaluation items, and behavioural intention items.

The attitude items were rated by four response scale categories: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Likert scale is the most popular methods to assess the attitude (Fabrigar *et al.*, 2005; Schibeci 1982). Content and face validity of the instrument was established by students and a panel of experts consisting of both faculty members and education specialists. According to the students' judgments and experts' comments, some items were modified and some others were replaced. After this screening process 38 items were found fit, about half of them positive (20 items) and the other (18) were negative. Alpha reliability coefficient of the 38-item scale was .957 and therefore 38-item scale was used for final data collection as it was more consistent to measure attitudes towards agriculture education (Peterson, 1994, Likert, 1932).

A survey method was adopted for data collection using a validated instrument (questionnaire). The questionnaire was administered by the researcher with the help of the agricultural teacher teaching the sampled students. The respondents were explained what is expected of them to reduce error in data collection. The data collected through Likert-type scale (scale categories), were scored such as Strongly Agree (SA) Agree (A) Disagree (D) Strongly Disagree (SD) and thereafter were coded by assigning numerals of 4, 3, 2 and 1 respectively. The negative items were reversely scored. The data were entered in to the SPSS 19 software package for the further analysis whereby descriptive and inferential statistics was used. Descriptive statistics was used to analyse the demographic variables of the respondents whereby frequency and percentages of each level of the independent variables were calculated. The inferential statistics involved t-tests statistical analysis and one way analysis of variance was used to find the extent to which demographic variables influence the attitude of students towards agriculture.

### **Results and Discussion**

The research design of the study is based on the model in which the background variables were independent variables, and the sum of the responses to the attitude items (attitude scores) was the dependent variable. Given the importance of agriculture in the human and economic life of a

nation it is important that effort be made to ensure the development of favourable attitude of learners toward the subject. Though demographic variables cannot be manipulated to bring about desirable changes in the attitude of students towards agriculture, an environment created with these variables can be manipulated. Therefore, it is wise to discuss the influence of demographic variables (dichotomous and discrete) on the student's attitude so as to understand their influence on the student's attitude.

The descriptive statistics analyses are presented in Table 1. All the independent variables were categorical or discreet hence t-test statistical analysis was done when the levels of the independent variables were two (see Table 2) and one-way analysis of variance was performed when the levels of the independent variable was more than two (see Table 3).

### Demographic Description of the Respondents

The demographic information collected from the students in the study included gender, location of residence, location of school, mothers level of education, fathers level of education, family income level, grade in Form 3 agriculture and students and parents intention to continue agriculture at university. Descriptive statistics was used to analyse the demographic variables. The frequency and percentages for demographic variables of the respondents are presented in Table 1.

The student gender frequency indicated that there were equal number ( $n = 120$ ) of male and female students in the study which contributed to 50% and 50% respectively to the student's population under study. The highest number of students (133) were staying in the rural area whereas the lowest of 29 (12.1%) stay in the peri-urban area. Comparing the parental educational level, the fathers were found to be high qualified than the mothers.

Table 1  
Demographic Characteristics of Respondents

Variable/Levels	f	%	Variable/Levels	f	%
Gender			P6.001 – P9,000	69	28.80
Male	120	50.00	> P9,000	140	58.30
Female	120	50.00	Performance in 10th Grade		
Location of Residence			Grade A	48	20.00

Rural	133	55.40	Grade B	88	36.70
Urban	78	32.50	Grade C	62	25.70
Peri-Urban	29	12.10	Grade D	33	13.80
Location of School			Grade E	9	3.80
Rural	120	50.00	Student's Intention		
Urban	120	50.00	Study Agriculture	61	25.40
Level of Mother Education			Not Study Agriculture	179	74.60
Illiterate	21	8.80	Currently Enrolled in		
Basic Education	59	24.60	Agriculture	74	30.83
Secondary Education	97	40.40	Not Agriculture	166	69.17
Tertiary Education	63	26.30	Parental Preference		
Level of Father Education			Study Agriculture	74	30.80
Illiterate	13	5.40	Not Study Agriculture	166	67.20
Basic Education	34	14.20	Person influencing decision to enrol in education		
Secondary Education	87	36.30	Parents	157	65.40
Tertiary Education	106	44.20	Sibling	52	21.70
Level of Family Income			Teachers	3	1.30
< P3,000/month	9	3.80	Friends	17	7.10
P3,000 - P6,000	22	9.20	Self	11	4.60

Only 26.3% mothers have obtained university education whereas the percentage of fathers who obtained university education was 44.2%. 5.4% of fathers and 8.8% mother were illiterate, respectively. Therefore, it can be said that mothers are still far behind than the fathers as far as parental education level is concerned and it may have influence on the attitude of their children. The family income levels of the students indicate that mostly (58.3%) students belong to the high economic level (above P9, 000.00) whereas a lowest of 3.8% students belongs to the low socioeconomic families (less than P3000). Only 20.0% of the students obtained an A grade while 36.7% of them obtained B grade in Form 3 agriculture followed by C grade (25.8%). A majority of the students (74.6%) do not intend to continue studying agriculture subject at university level and 69.2% parents do not want their children to study agriculture at higher level. The decision in choosing type of education (agriculture or non agriculture) was highly influenced (65.4%) by parents followed by brothers and sisters (21.7%) and the lowest by the teachers (1.3%). It indicated that students as well as their parent are not interested in enrolling for agriculture and therefore, there is a need to find out the reasons behind this phenomenal mindset.

### Influence of Dichotomous Background Factors on Students' Attitude

The independent t-test analysis done to test the hypotheses related to dichotomous independent variables are presented Table 2. The findings showed that gender ( $t = -0.18$ ) and parental preference of the type of study to be undertaken by the students ( $t = -0.87$ ) showed no significant influence on the attitude of students towards agriculture, whereas location of school ( $t = -9.28$ ), students' intention to or not to study agriculture ( $t = -2.28$ ), and the programme to which the student is currently enrolled ( $t = -12.21$ ) showed significantly influence on students attitude towards agriculture. In other words, the gender of students and their parental preference as to what carrier the student should enter into do not have significant influence on students' attitude towards agriculture. It also implies that there is no gender difference in the attitude of students towards agriculture. Also, parents are not influencing the attitude of their children towards agriculture.

Table 2

Independent t-Test of the Influence of Participants' Demographic Factors on Attitude toward Agriculture ( $df = 238$ )

Variable	Level	n	$\bar{x}$	SD	Difference		t-value
					$\bar{x}$	SED	
<b>Gender</b>	Male	120	43.37	7.77			
	Female	120	43.53	6.69	-.167	0.94	-0.18
<b>Location of School</b>	Urban	120	47.18	6.54			
	Rural	120	39.73	5.87	-7.45	0.80	-9.28*
<b>Student's Intention</b>	Study	61	41.63	6.75			
	Not Study Agric.	179	44.07	7.31	-2.43	1.06	-2.28*
<b>Current Enrolment</b>	Agriculture	120	38.97	5.32			
	Not Agriculture	120	47.93	6.03	-8.97	0.73	-12.21*
<b>Parental Preference</b>	Study Agric.	74	42.84	7.84			
	Not Study Agric.	166	43.72	6.96	-0.89	1.01	-0.87

\* $p < .05$

Table 2 indicated that the location of school significantly influence students attitude towards agriculture. Moreover, the schools located in urban has greater influence ( $\bar{X} = 47.18$ ) on the attitude of students as compared to the influence of schools located in rural areas ( $\bar{X} = 39.73$ ). This also indicates that people wanted to migrate to the urban areas. Therefore, it is suggested that new schools offering agriculture should be built in urban area rather than in rural areas. All the students either in rural or urban students should also be motivated by the stakeholders so as to enrol for agriculture. Student's intention of studying agriculture has lower influence ( $\bar{X} = 41.63$ ) on the attitude as compared to those students who are not intended to study agriculture and rather doing other subjects ( $\bar{X} = 44.07$ ). On the similar way, the students who are currently studying agriculture have significant lower influence ( $\bar{X} = 42.84$ ) towards agriculture than those who are studying other subjects rather than doing agriculture ( $\bar{X} = 43.72$ ).

### Influence of other Discrete Background Factors on Students' Attitude

One way analysis of variance (ANOVA) was employed to investigate the influence of background variables on the attitude of students towards agriculture. The results of the analysis are presented in Table 3. These indicate that only three variables namely; level of mother's education ( $F_{(3, 238)} = 5.96, p = .001$ ), level of family income ( $F_{(3, 236)} = 5.35, p = .001$ ) and location of residence ( $F_{(2, 239)} = 25.57, p = .000$ ) significantly influence the attitude of students towards agriculture. However, the other demographic variables namely: level of father's education ( $F_{(3, 239)} = 2.19, p = .090$ ), level of past academic performance ( $F_{(4, 239)} = 1.69, p = .153$ ) and person influencing decision to enrol ( $F_{(4, 239)} = 0.66, p = .622$ ) did not have significant influence on the attitude of students toward agricultural education.

Table 3

One-way Analysis of Variance (ANOVA) of the Influence on Students' Attitude toward Agriculture by some Demographic Factors

Variable	Level	n	$\bar{X}$	SD	SE	Source of Variation	SS	df	MS	F	Sig.
Level of Mothers' Education	Illiterate	21	41.05	7.49	1.64	Between Groups	883.23	3	294.41	5.96	.001
	Basic Educ.	59	42.17	6.74	0.88						
	Secondary Education	97	42.72	6.84	0.69	Within Groups	11642.17	236	49.33		
	Tertiary Education	63	46.57	7.39	0.93						

	Total	240	43.45	7.24	0.47	Total	12525.40	239			
Level of Fathers' Education	Illiterate	13	40.38	4.70	1.30	Between Groups	339.68	3	113.23	2.19	.090
	Basic Educ.	34	41.91	7.56	1.29						
	Secondary Education	87	43.16	6.80	0.73	Within Groups	12185.72	236	51.63		
	Tertiary Education	106	44.56	7.59	0.74	Total	12525.40	239			
	Total	240	43.45	7.24	0.47						
Level of Family Income	<P1000.00	9	41.56	6.11	2.04	Between Groups	797.73	3	265.91	5.35	.001
	P1000 to P3000	22	40.14	6.19	1.32						
	P3001 to P5000	69	41.71	7.14	0.86	Within Groups	11727.67	236	49.69		
	> P5000.00	140	44.95	7.17	0.61	Total	12525.40	239			
	Total	240	43.45	7.24	0.47						
Past Level of Performance	Grade A	48	43.10	6.86	0.99	Between Groups	350.47	4	87.62	1.69	.153
	Grade B	88	42.64	6.93	0.74						
	Grade C	62	44.69	7.51	0.95	Within Groups	12174.93	235	51.81		
	Grade D	33	44.82	7.86	1.37						
	Grade E	9	39.67	6.71	2.23	Total	12525.40	239			
	Total	240	43.45	7.24	0.47						
Person Influencing Decision to Enrol	Parents	157	43.03	7.14	0.57	Between Groups	138.66	4	34.66	0.66	.622
	Siblings	52	43.75	7.79	1.08						
	Teacher	3	47.67	8.33	4.81	Within Groups	12386.74	235	52.71		
	Friends	17	45.06	7.19	1.74						
	Self	11	44.36	6.14	1.85	Total	12525.40	239			
	Total	240	43.45	7.24	0.47						
Location of Residence	Rural	133	40.72	6.80	0.59	Between Groups	2222.98	2	111.49	25.57	.000
	Urban	78	46.94	6.60	0.75						
	Peri-Urban	29	46.59	5.47	1.02	Within Groups	10302.42	237	43.47		
	Total	240	43.45	7.24	0.47	Total	12525.40	239			

Given the overall significant influences of level of mother's education, level of family income, and location of residence, least square significant (LSD) post-hoc analyses were done. Mother's with tertiary level of education had significantly more influence ( $\bar{X} = 46.50$ ) followed by secondary level of education ( $\bar{X} = 43.16$ ) and primary level of education ( $\bar{X} = 42.17$ ) on students' attitude towards agriculture than mothers with any other level of education. It indicated that higher the mother's level of education, higher the influence on the students attitude towards agriculture. It reflects that mothers' level of education plays an important role in shaping the attitude of students and therefore, mothers' education should be encouraged. Family with income more than P5000.00 were found to have significantly more influence ( $\bar{X} = 44.95$ ) followed by family income between P3001 to P5000 ( $\bar{X} = 41.71$ ) on their children's' attitude towards agriculture. It is therefore concluded that higher the income, higher the influence on the attitude of students towards agriculture. Therefore, means of improvement in income of the families should be strategized. Similarly, urban dwellers showed significantly more influence ( $\bar{X} = 46.94$ ) followed by peri-urban dwellers ( $\bar{X} = 46.59$ ) and rural dwellers ( $\bar{X} = 40.72$ ) on the attitude of students towards agriculture. It is concluded that the migration to urban can help in improving the positive attitude towards agriculture in the future and therefore, government should facilitated people migration to urban areas by creating effective migration policies.

### **Conclusion and recommendations**

The findings of the study has indicated that the three dichotomous demographic factors; location of school, student's intention to or not to study agriculture, program in which student is currently enrolled have significant influence on the attitude of students towards agriculture. Moreover, the schools located in urban have greater influence on the attitude of students as compared to the influence of schools located in rural areas. Therefore, it is suggested that new schools should be built in urban area rather than in rural areas. This phenomenon also reflects that people have intention to migrate to urban areas. The three discrete demographic variables; level of mother's education, level of family income and location of residence also had significantly influence on the attitude of students towards agriculture. More precisely, higher level of mother's level of education, high level of family income and residing in urban have high level of significant influence on the attitude of students towards agriculture. Therefore, it was recommended that there

is a need to form and implement effective policies to improve mother's level of education, level of family income and migration to urban.

### References

- Anor, E. (2012, May). Challenges to young people's participation in agriculture. *New Agriculturist*, May 2012
- Baliyan, S. P., & Nenty, H. J. (2015). Factors underlying attitude towards agriculture as a predictors of willingness to enrol in the subject by secondary school students in Botswana. *Journal of Educational and Social Research*, 5(1), 377-386
- Borg, W. R., & Gall, M. D. (1983). *Educational research: An introduction*. New York: Longman.
- Botswana Educational Council (2009). *BGCSE examination summary of results*. Gaborone: Government printer.
- Evans, K.M. (1965). *Attitudes and interests in education*. London: Routledge & Kegan Paul.
- Fabrigar L.R., MacDonald T.K., & Wegener D.T. (2005). The structure of attitudes. In D. Albarracin, B.T. Johnson, & M.P. Zanna (Eds.), *The handbook of attitudes* (pp.79-103). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gall, D.M., Gall, P.J. & Borg, W.R. (2003). *Educational research*. Boston: Allyn and Bacon
- Ghanini, N. (1994). Attitudes toward vocational education of tenth-grade students in public schools in the Madaba District. *Dirasat*, 21A, 3, 93-121.
- Government of Botswana (1994). *Revised national policy on education*. Gaborone: Government printer.
- Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurements*, 30, 607-610.
- Likert, R. (1932). The method of constructing an attitude scale. In G.M. Maranell (Ed.) *Scaling: A source book for behavioural scientists*. Chicago: Aldine Publishing Company.
- Lone, M. (2007, November). Student's attitude towards agriculture at Maikano Community Junior Secondary School. *The Entrepreneur; CEDA Newsletter*, 18-19.
- McMillan, J.H. (1980). Attitude development and measurement. In J.H. McMillan (Ed.), *The social psychology of school learning*. New York: Academic Press.

- Peterson, R.A. (1994). A meta-analysis of Cronbach's Coefficient Alpha. *Journal of Consumer Research*, 21, 34-47
- Rossetti, R. (1989). *Factors that influence a student not to enter into a high school vocational curriculum*. Ohio State University, Department of Education, Columbus, (ED301697).
- Rossetti, R. (1990). *An examination of factors influencing students not to enrol in secondary vocational education*, Summary of Research 53. Columbus, OH: The Ohio State University. Department of Agricultural Education.
- Schibeci, R.A. (1982). Measuring student attitudes: Semantic differential or Likert instruments? *Science Education*, 66 (4), 565-570.
- Stopher, P.R., & Meyburg A. H. (1979). *Survey sampling and multivariate analysis for social scientists and engineers*. Lexington Books, D.C. Heath & Co: Lexington, Massachusetts.
- Sube, H. (1981). Choice of profession, vocational training, occupation and work. Paper presented to the "Youth Sociology" Research Committee of the International Sociological Association (Fredeburg, Federal Republic of Germany, March 23-27, 1981). Retrieved from: <http://eric.ed.gov/?id=ED202661>