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Youth`s psychosocial characteristics in agriculture: The case of Bukidnon, Philippines

Anecil S. Quijano-Pagutayao

Department of Agricultural Education and Extension, College of Agriculture Central Mindanao University, Anecil S. Quijano-Pagutayao, ORCID: https://orcid.org/0009-0002-5615-4597

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*Corresponding author: *f.anecilquijano.pagutayao@cmu.edu.ph*

ABSTRACT

The study sought to analyze the youth`s psychosocial characteristics in agriculture in Bukidnon, Philippines. Specifically, this study aimed to describe the socio-demographic characteristics of the senior high school students; assess the knowledge of the students in agriculture; determine the student's attitude towards agriculture and to identify the student's motivation towards agriculture as a degree program. Data were gathered through guided interview that was personally administered to 383 respondents who were in Grade 12 senior high school (DepEd, District of Bukidnon). Focus group discussion and key informant interview were also used in the study. Descriptive statistical tools such as mean, rank, percentage, and frequency counts were employed. Thefindings of the study reveal that the respondents were mostly female, and have experiences in farming. Their parents have moderate level of education. More than half of the respondents' families do not own a piece of land used in agriculture (51%). They are willing (45%) to engage in agriculture but are not willing (55%) to enroll in an agriculture degree. These youth have low level of knowledge and skills in agriculture and have favorable attitude and positive motivation towards a degree.

Keywords: Agriculture, farmer, knowledge, motivation, skills

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INTRODUCTION

The future of agriculture rests on the youth sector. Defined as those that belong to the age range 15-24 years (UNESCO, 2015), the youth have a strong role and potential in providing solutions to the global challenges of agriculture. However, agriculture as a profession has become less attractive to the youth (AFA, 2015; Eissler and Brennan, 2015; FAO, 2014; Paisley, 2014). Despite the youth's potential in providing solutions to the global challenges of agricultural development, their engagement in agriculture has been limited (AFA, 2015; FAO, 2014). Furthermore, the participation of the youth sector in agriculture has dwindled due to the youth's negative perception of agriculture and its consequent unattractiveness as a degree.

Because of the decreasing percentage of the youth population in the agricultural sector, there are more aging farmers. According to STATISTA (2023), the agriculture sector accounted for 23.1% of the total employment share in the Philippines in 2022. The World Bank data indicates that the employment in agriculture was 24.27% of the total employment in the Philippines in 2021 (Worldbank, 2024). CEIC reported that in July 2023, employment in agriculture in the Philippines was at 9,614.000 persons, showing a decrease from the previous quarter. In the Philippines, for example, the average age of farmers is 57 years (Elauria, 2015). This implies that Filipino farmers are about to retire, are physically weak and vulnerable, and may not be as active as they were in their youth in doing different farm activities. While there are ageing farmers who can still produce agricultural products, the older farmers are less likely to try new farming technologies (FAO, 2014).

The literature suggests two reasons for the youth's limited involvement in agriculture: a) the youth's increasing negative perception about agriculture as a source of income and employment (Abdullah et al., 2012; AFA, 2015; Elauria, 2015; Noorani 2015; Proctor and Lucchesi 2012; Shresta 2001; Zamora 2014; Chinsinga and Chasukwa, 2012;FAO, 2013;Eissler and Brennan, 2015; FAO, UNESCO, 2009); b) the declining rate of enrollees and graduates of the Bachelor of Science in Agriculture (BSA) and related sciences (Zamora, 2014).

Agriculture is introduced in the K-12 Program, particularly Grades 11 and 12, the junior-senior high school students. Education of the youth is central in addressing the challenges of today's agricultural sector and education also influences the young people to be a catalyst of change in agriculture. The development of the agriculture sector has been affected by the limited engagement of the youth. The consequences and causes of the problem on the limited involvement of the youth sector in agriculture were discussed earlier. The forecast report from UN/FAO highlighting how the lesser integration of young people in the agriculture sector poses a significant threat to food security can be found in the FAO document titled "Promoting youth engagement and employment in agriculture and food systems" (FAO, 2015).

This report emphasizes the importance of engaging young people in agriculture to ensure sustainable food systems and addresses the challenges associated with the lack of youth involvement in the sector. This study intended to understand what are the psychosocial characteristics of Filipino youth and how they perceive agriculture.

The study is an attempt to analyze the stated problem in the case of the Province of Bukidnon where some registered Grade 12 students might pursue BSA program.

The study aimed to identify the socio-demographic characteristics of the senior high school students; assess the

students' knowledge in agriculture skills; identify the students attitude towards agriculture and to determine the students motivation to enrol in agriculture as a degree program.

The study may provide information and guide youth in making informed decisions regarding their choice of degree and enhanced youth participation in agriculture to address challenges related to food security, youth unemployment, contributes to sustainable food systems and creating employment opportunities. Policymakers can design interventions that would attract the youth to engage in the agricultural sector and can create a supportive ecosystem that empowers young individuals to contribute meaningfully to the agricultural sector.

METHODOLOGY

A landlocked province in Northern Mindanao, Bukidnon is located at the heartland of Mindanao. Low plains alternating with rolling uplands, deep canyons and valleys characterize the terrain. It lies between the parallels 7'25' and 8'38' north latitude and meridians 124'16' east longitude. The region is characterized by mountainous terrains which are often considered marginal farmlands. The sloping farmlands of Bukidnon are home to indigenous and smallholder farmers and records some of the highest poverty incidents in the region.

A combination of quantitative and qualitative methods approach was used in the study. The quantitative approach,

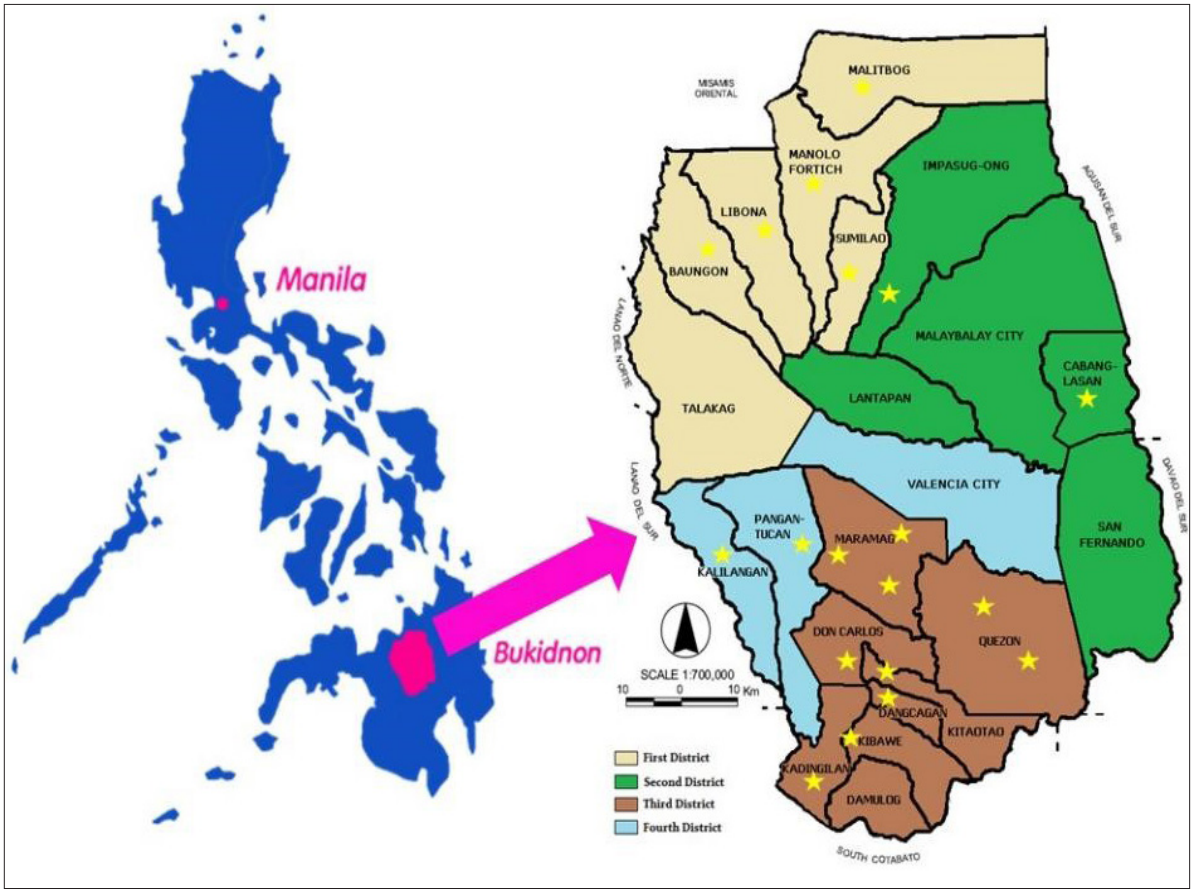

Figure 1. Map showing the locale of the study in the province of Bukidnon.

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with appropriate sampling, enables the measurement of respondents' reaction to a set of questions with answers. The qualitative approach gives an in-depth experience of the real life of the respondents. According to Creswell (2007), the qualitative approach yields information that is much more fruitful, innovative and deep in meaning even though the number of respondents included is fewer.

Corn is the dominant crop planted in the region constituting about 34% of the land followed by rice which only constitutes about 21%. Other important crops planted, although not widely cultivated include sugarcane, white corn, pineapple, coffee, banana, mango, cacao, rubber, coconut, and tomato (PSA, 2017). The province of Bukidnon has a total of 3 divisions, Malaybalay City, Valencia City and Division of Bukidnon (Aparecio, 2018). From this division the division with offering grade 12 with most TVL strand (Agriculture) was the division of Bukidnon, thus the study was limited to this division. Figure 1 presents the map showing the locale of the study in the province of Bukidnon.

Respondents of the study and sampling procedure

The respondents of this study were the Grade 12 students of the public schools in Bukidnon. The senior high school students were considered as respondents of the study since they were within the age range of youth (15-24 years old) as defined by UNESCO (2015). This group can decide on their own whether they would take up a degree related to agriculture or other professions. This was also the most crucial stage where they can credibly give empirical thoughts on their own predispositions to choose their future degree. The researcher identified the senior high schools in the Division of Bukidnon offering the Agriculture and Fishery Arts (AFA). A total number of 383 students were interviewed and the highest number of respondents were 29% enrolled in Agriculture followed by Information and Communication Technology (ICT) with 28% followed by home economics, HUMMS, Industrial Art, General Academic Strand (GAS) and wielding.

Table 1. School covered and the sample size of the study.

School	Population	Sample size
1. Baungon NHS	154	11
2. BocBoc NHS	221	15
3. Bukidnon NHSHI	697	46
4. Cabuluhan NHS	311	23
5. Dangcagan NHS	241	19
6. Dologon NHS	220	15
7. Impasug-ong NHS	312	22
8. Kalilangan NHS	415	29
9. Kibawe NHS	121	8
10. Kitaotao NHS	135	8
11. Kuya NHS	117	8
12. Libona NHS	280	20
13. Malitbog Agricultural HS	109	8
14. Monolo Fortich NHS	703	49
15. Pangantucan NHS	328	23
16. Quezon NHS	641	45
17. San Andres NHS	289	20
18. Sumilao NHS	218	14
Total	**5512**	**(N)=383**

Sampling procedure

Out of the 3 division the division of Bukidnon grade 12 students were chosen as the participants of the study. A letter to conduct the study were submitted to the division to asked permission for sampling procedure and data gathering. The list were provided by the office of the Division Superintendent, Division of Bukidnon Region X. The total population of the grade 12 students in Division of Bukidnon was 5,512. To come up with the sample size the Cochran formula was utilized and the sample size of the study was 383. In order to have a representative sample from each school, ratio and proportion was used. From the sample size, the researcher employed a simple random sampling. Participants were enrolled in Grade 12 in the Division of Bukidnon and they represent all the strands from each secondary schools. Table 1 showed the distribution of the respondents per school.

Data gathering techniques

Guided interview/survey

An interview was the primary method of data collection. The interview guide was developed based on the objectives of the study and the literature review. The interview guide had the following parts: Socio-demographic Factors, Knowledge in Agriculture, Motivation towards Agriculture, Skills in Agriculture and Questionnaire content was modified from three instruments used by Faulker et al., (2009) and Thielen (2012). Faulker et al., (2009) determined the attitudes that former Food and Agriculture Science Institute (FASI) participants had toward the food and agricultural sciences and factors that influenced their decision in the selection of their educational and degree choices. The questionnaire for this study used the same five-point Likert-type scale and used the same criteria to define if a factor was considered influential. Questions related to opinions and feelings had 10 items each. For these questions, the respondents were asked to rate the formulated questions using the five-point Likert-type scale (1=strongly disagree, 2=disagree, 3=undecided 4=agree, 5=strongly agree) of Douglas et al., (2017). Accordingto Pearse (2011), Likert-scale types of interview items result in a single score that represents the degree to which each statement is favourable or unfavourable.

Prior to the conduct of the study, the questionnaire was subjected to content validity through the conduct of pilot testing among students who are not included as the respondents of the study. Pre-testing the questionnaire used was valuable as undesirable and long questions were revealed and changed to improve the validity of the instrument. Furthermore, comments and suggestions made by the non-participants were incorporated to improve the questionnaire.

The questionnaire was subjected to Cronbach's alpha test in order to assess the reliability, or internal consistency of the items in the psychosocial characteristics and person who influence the youth in their degree choice. Cronbach's alpha was used to measure the strength of consistency of items to measure (Ritter, 2010). Cronbach's alpha was computed by correlating the score for each scale item with the total score for each of the survey respondents and then by comparing that to the variance for all individual item scores. The questionnaire had a Cronbach's alpha value of 0.92 or 92 percent of reliability which means that the questionnaire used is reliable and that its internal consistency is under the excellent category (Statistics solutions, 2019). The questionnaire was written in English first and then translated to the local dialect of the respondents during the interview. Some of the questions in the survey questionnaire were partially close-ended in order to collect raw data from the respondents while open-ended questions were used during the focus group discussion (FGD).

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Focus group discussion (FGD)

In this study, the session was conducted with those aged 15 to 24 years old, which was done purposely to capture the opinions of the group on the subject matter and to ensure triangulation of information. The FGD was participated by 10 students from grade 12 senior high school with various strands. Descriptive statistics such as means and percentages were used to describe the sociodemographic profile of the Grade 12 students. Average scores from a Likert-type scale were used to determine the Grade 12 students' knowledge, skills and motivation towards agriculture. The following scale was used in the study:

Likert Scale:

5 = Strongly agree
4 = Agree
3 = Undecided
2 = Disagree
1 = Strongly disagree

RESULTS AND DISCUSSION

Parents' highest educational attainment

Figure 2 and 3 presents the highest educational attainment of the head of the family. The level of education of parents plays a crucial role in influencing their children with the choice of degree. According Smith (2020), Johnson and Martinez (2019), and Brown (2018) on the influence of parental education on agricultural degree choice. Majority (36%) of the respondents' fathers reached the elementary level, while a little more than one fourth (26%) attained the secondary level of education. Moreover, 13% of the respondents' fathers or male guardians completed their secondary education and very few (6%) had parents who had earned college degrees. For the respondents' mother or female guardian, on the other hand, a little more than a quarter (28%) reported high school level as their highest educational attainment, whereas another quarter (26%) had reached the elementary level. Only 20% graduated from the secondary level and some 16% had reached or graduated from the tertiary level. Accordingly, it can be concluded that majority of the students' mothers or female guardians were not well-educated. The level of parents' education can influence the respondents' in choosing their degree. However, Jones and Larke (2001) reported that the level of parents' or guardians' education failed to influence their students' decision to choose agriculture-related degree in college. The authors described and identified factors related to the decision to choose agriculture and an agriculture-related field before or after the tertiary education.

Land ownership

Land ownership is one of the factors that can affect the interest of the youth in choosing agriculture as a degree. Table 2 show that 48% of the respondents owned land used for agriculture. However, more than half (52%) of the respondents did not own land used for agriculture.

Experience in farming

Experience is necessary in producing crops (Pereda, 2008). Table 3 shows that a little less than two-thirds (65%) of the respondents had experience in farming while 35 percent had no experience in farming. The data indicate that, in general, respondents had farming experience. This result is the same with the study of Abarwati et al., (2023) who emphasizes the significance of understanding young farmers' experiences and practices agriculture.

This result contradicts the findings of Saliu et al., (2016), who found that majority of the respondents had no experience in agriculture before entering college. However, this finding was expected as Bukidnon is a predominantly agricultural province.

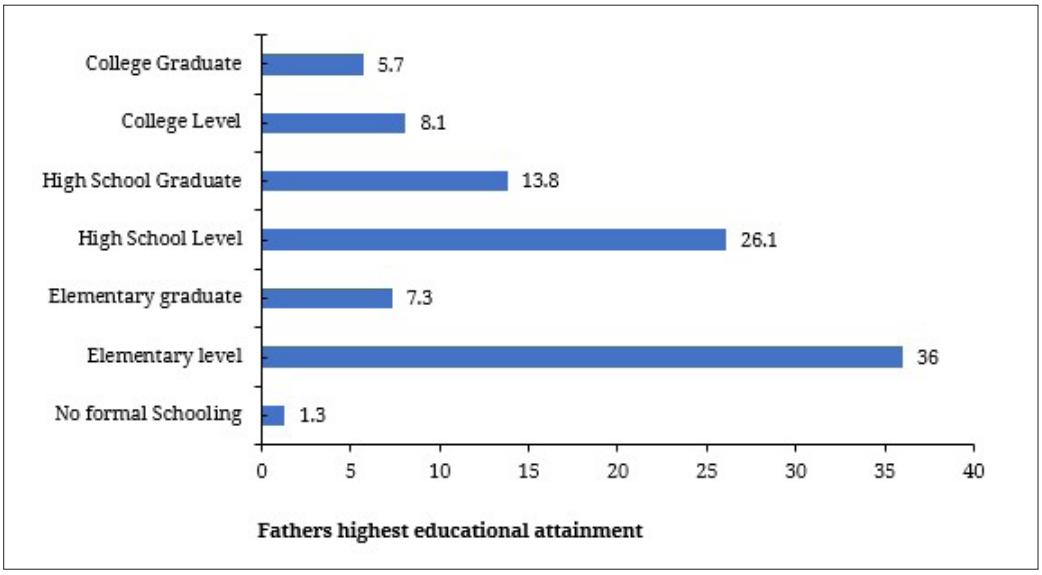

Figure 2. Personal Characteristics of the respondent's parents based on the fathers highest educational attainment.

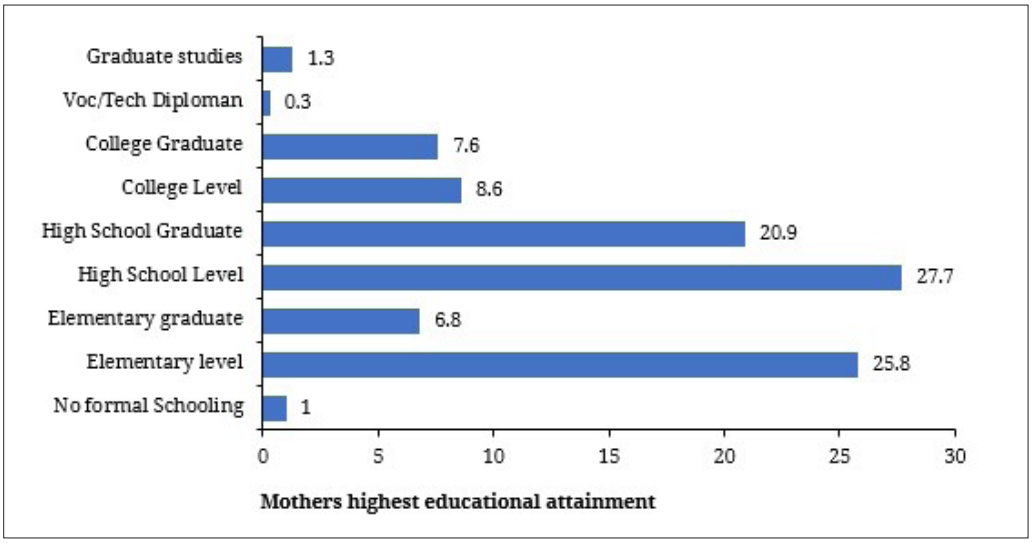

Figure 3 . Personal characteristics of the respondents parents based on the mothers highest educational attainment.

Farm size

Table 2 illustrates that more than half (51%) of the respondents did not own land used for agricultural purposes. Among those who did, 46% had a farm whose size ranged from 1 to 5 ha while the remaining 3% reported having farms larger than 6 ha. The average size of respondents' farms was 1.2 ha. These results suggest that a great bulk of the respondents did not have land used for agriculture and that the size of the land used for agriculture was generally small. The data impliesthat young people with more years in farming have positive attitude in agriculture are more likely to enroll in agriculture. This finding is similar to the result of Douglas et al., (2017) who reported that most respondents did not own land. However, with the increasing population, not to mention the youth bulge in the Philippines, the arable land per capita declined from 0.18 ha per person in 1961 to 0.05 ha per capita in 2014.

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Table 2. Socio-demographic characteristics.

Characteristics	Frequency	Percentage
Land own for used in agriculture		
Yes	183	48
No	199	52
Farming experiences		
Yes	249	65
No	133	35
Land own for agriculture (ha)		
0	196	51
1-5	175	46
6-10	11	3
>11	1	0.3
Mean		1.2
Years in farming		
1-5	282	74
6-10	82	21
11-15	18	5
>16	1	0.3
Mean		3
Source of knowledge in agriculture		
School	104	27
Television	37	10
Father	7	2
Parents	200	52
Internet	15	4
Neighbor	20	5

Years in farming

Table 3 shows the distribution in terms of number of years in farming of the 249 respondents. Almost three-fourths (74%) of the respondents reported that they had experience in farming which ranged from 1-5 years. On the other hand, nearly one-fourth (21%) reported to have spent 6 to 10 years in farms. In general, mean years of farming experience was 3.47 years. These findings indicate that the respondents have farming experience and that they are mostly familiar with the farming industry. This result is in line with the work of James and Denis (2015) and Abebo and Sekumade (2013) in their conclusions that respondents had experience in farming before being admitted to their university.

Sources of information on agriculture

Table 3 shows the general sources of information of the respondents. Majority (52%) of the respondent's source of information were their parents, followed by their school which was reported by a little more than a quarter of the respondents (27%). These findings suggest that the respondents can learn new information and techniques related to agriculture from their homes. This further verifies that parents are the respondents' primary source of information on agriculture. This result corroborates with the study of Gartaula et al., (2020) who mentioned that parents served as the primary source of agricultural knowledge for the student respondents which plays a crucial role

in imparting information and skills within rural communities. The youth are able to observe from their homes how agriculture works and these observations can be influential as they decide on their degree path.

Psychosocial characteristics

Knowledge about agriculture

Table 4 presents the respondents' knowledge on agriculture. The table shows that the only statements for which the respondents answered "Undecided" were statement number 10 ("The removal of unwanted weeds and plants in the farm is called grading") and statement number 6 ("The planting materials for sugarcane is seeds") which had mean values of 3.44 and 2.51, respectively. The rest of the research statements were answered by the respondents with strongly agree and agree. These results show that the students had a general knowledge of agriculture but failed to correctly answer the statement "Rice plant is a producer of fiber." Respondents should have disagreed with this statement as rice does not produce fiber; instead, it should have been banana, specifically its Abaca variant.

Based on these results, it can be deduced that the respondents do not have enough knowledge in agriculture. Inadequate knowledge in farming remains one of the constraints in encouraging the youth to engage in farming. Naamwintome and Bagson (2013), reported that young farmers do not see a future in farming because of the lack of support, encouragement and promotion of suitable knowledge and skills.

Table 3. Distribution of respondents according to their knowledge about agriculture.

Statements	Mean	Descriptive rating
1. A female chicken is called a hen.	4.52	Strongly agree
2. Potatoes and carrots both grow in the ground.	4.55	Strongly agree
3. Agriculture is important to my community.	4.78	Strongly agree
4. Agriculture is a business.	4.52	Strongly agree
5. Food comes from agriculture.	4.78	Strongly agree
6. Organic farming is a production system which avoids or excludes synthetically compounded fertilizers and additives	4.2	Agree
7. Shelter is a product of agriculture.	4.06	Agree
8. Rice produces fiber.	3.94	Agree
9. The planting materials for sugarcane is seeds.	2.51	Undecided
10. The removal of unwanted weeds and plants in the farm is called grading.	3.44	Undecided
Over-all Mean	**4.13**	**Agree**

Legend: 4.51 - 5.00 Strongly agree, 3.51 - 4.50 Agree, 2.51 - 3.50 Undecided, 1.51 - 2.50 Disagree, 1.00 - 1.50 Strongly disagree

Skills in agriculture

Skills are important, as some students tend to pursue a degree for which they already have the in-depth skills necessary in practicing the said degree. As shown in Table 4, the grade 12 students of Bukidnon agreed with statement 1 (I know how to harvest corn, rice and other crops), statement 2 (I know how to sort fruits and vegetables from the small, medium to large for export quality) and statement 3 (I know how to properly prepare the soil for raising the seedling for crop production) with mean values of 3.95, 3.55 and 3.55 respectively.

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These were the only skills that the students had in relation to agriculture. The rest of the statements were answered by the students as undecided; this might be because they were not familiar with the term or they may have not known how to perform them. In general, students really do not have in-depth skills suitable in the practice of agriculture.

Table 4. Distribution of respondents according to their skills in agriculture.

Statements	Mean	Descriptive rating
1. I know how to harvest corn, rice and other crops.	3.95	Agree
2. I know how to sort fruits and vegetables from the small, medium to large for export quality.	3.55	Agree
3. I know how to properly prepare the soil for raising the seedling for crop production.	3.55	Agree
4. I know how to properly care the pregnant animals.	3.04	Undecided
5. I know how to manage the health of the animals.	3.31	Undecided
6. I know how to conduct artificial insemination.	2.74	Undecided
7. I know what kind of fertilizer to apply on different crops.	3.25	Undecided
8. I know how to control different kinds of pests and diseases in the farm.	3.10	Undecided
9. I know how to apply mulch to the crops.	3.22	Undecided
10. I know how to make organic fertilizers.	3.37	Undecided
Overall mean	**3.31**	**Undecided**

Legend: 4.51 - 5.00 Strongly agree, 3.51 - 4.50 Agree, 2.51 - 3.50 Undecided, 1.51 - 2.50 Disagree, 1.00 - 1.50 Strongly disagree

Reasons behind the motivation towards a degree program

Degree that has the opportunity to earn a large salary

Table 5 Distribution of respondents according to their reasons behind the encouragement /motivation of a certain degree choice . Based on the data, the respondents strongly agree with statement (I wanted a degree that has the opportunity to earn a large salary) which recording a mean score of 4.52. This is similar to the result of McGraw et al., (2012), who reported that a good salary is also one the factors that influenced the degree choice of agricultural economics professionals.

Respondents agreed that having a positive work environment, good salary, family time, adequate resources, and professional and social interaction were important job attributes. In this study, a binomial probit model of specification was used. However, this is in contrast with the result of Jones and Larke (2001) who reported that salary was not considered by the respondents in their choice of degree. The study aimed to identify and describe the factors that were related to African American and Hispanic graduates' decisions to choose (or not to choose) a degree in agriculture prior to or after college. An ex-post facto design and mailed questionnaires were used in the study.

For statements number 2 to number 10, respondents agreed with all the statements. This finding is the same with the work of Igret and Agoston (2014), where they found that respondents see merits of a degree other than salary to weigh heavily in their choice for a degree as grounded on their personal preferences. The overall mean score of the research statements 1-10 was 4.16, which indicates that respondents agreed with all of the statements.

Table 5. Distribution of respondents according to their reasons behind the encouragement /motivation of a certain degree choice.

Sta**tements**	**Mean**	**Descriptive rating**
1. I wanted a degree that has the opportunity to earn a large salary.	4.52	Strongly agree
2. The job satisfaction of the career is a great motivation in choosing my degree.	4.50	Agree
3. The security of tenure of the degree is a great motivation in choosing my degree.	4.05	Agree
4. The relationship towards other people in the career is a great motivation in choosing my degree.	4.03	Agree
5. The challenges at the job are a great motivation in choosing my degree.	4.25	Agree
6. Flexibility of the job is a great motivation in choosing my degree.	4.26	Agree
7. Learning opportunities area great motivation in choosing my degree.	4.38	Agree
8. Promotion opportunities is a great motivation in choosing my degree.	4.26	Agree
9. I wanted a degree that will allow me to work with my hands.	4.35	Agree
10. Having the opportunity to travel related to work was appealing to me.	4.16	Agree
Over-all mean	**4.28**	**Agree**

Legend: 4.51 - 5.00 Strongly agree, 3.51 - 4.50 Agree, 2.51 - 3.50 Undecided, 1.51 - 2.50 Disagree, 1.00 - 1.50 Strongly disagree

CONCLUSION

The 383 respondents were grade 12 students with parents who reached the elementary and high school level. Most of them did not owned a land used for agriculture and farming is the main occupation of their parents. The average monthly income of respondents' family was Php 9,087.79. Respondents were the ones who chose their respective degrees and their main reason for choosing their degree wasto help their family and earn a higher income.

The respondent's psychosocial characteristics involves knowledge, skills and motivation of the students in choosing the degree program. It can be deduced that the respondents do not have enough knowledge in agriculture. Students really do not have in depth skills suitable in the practice of agriculture. As to the respondents motivation in choosing a degree that has the greater opportunity to earn a large salary was chosen.

RECOMMENDATION

Based on the findings above the following recommendation were drawn.

This study suggests that the external or environmental factors are vital factors to support a favorable attitude and positive motivation for students to pursue agriculture as a career.

1. Parents educational attainment plays a vital role in choosing a degree program.
2. Students in Bukidnon has limited knowledge and skills in agriculture thus awareness programs on the availability of the agriculture degree program in the state colleges and universities should be continued to enrich prospective students.
3. Students motivation to choose a degree program is the opportunity to earn large salary thus an increased salary and other benefits should be available to the students like land, capital, and grants should be given to agriculture graduates who want to engage on agricultural enterprises shortly after graduation.

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4. Linkages should be established with the private industry for employment opportunities as well as On-the-Job Training (OJT) opportunities. This can also aid in the sharing of resources such as animals and land for the purpose of the students' skills training and other experiential learning activities.

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