Feeding the Future: Knowledge and Perceptions of the Filipino Youth Toward Agriculture

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ABSTRACT

Cognizant of the critical role the youth could play to sustain, develop, and build a sustainable, resilient, and inclusive agriculture industry, this study was conceptualized to establish a thorough understanding of the determinants of the Filipino youth's intention to enroll in agricultural degree programs. This research assessed the younger generation's agricultural learning experiences and explored their perception of the agriculture industry and evaluated how these different factors affected the shaping of their uptake of agricultural courses. The study utilized a case study approach in the local context of General Santos City, Philippines. The key findings reveal that while the youth report high exposure to agricultural information, these have not been translated into inherent know-how; they attained only average scores in the assessment of their agricultural knowledge. They also have limited knowledge or familiarity with agricultural professions. In addition, the majority held positive economic, social, and personal perceptions toward the industry. However, they expressed reservations in considering if employment opportunities in the sector are profitable, if the society will hold them in high regard once they engage in the sector, and if they have the suitable skills and know-how to engage in the sector. Statistically, age, social participation, and personal perceptions were found positively significant ($p<0.05$), while economic perceptions were negatively significant ($p<0.05$) in determining the youth's intention to enroll in agricultural programs and ultimately engage in agriculture. Thus, it is inferred that intervention programs, starting early in the curriculums of the youth, along with social programs that highlight capacity building, are necessary to pique their interest toward the industry and entice them to engage in its professions.

Keywords: agricultural development, youth perceptions, social survey
JEL codes: I25, O13, R11

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INTRODUCTION

Deemed as the fount of civilization, agriculture is regarded to be at the core of human existence as it provides the most basic anthropological and physiological needs of humankind (Bocquet-Appel 2011; Federico 2008). In the Philippines, agriculture is officially recognized as the nation's economic backbone (The Official Gazette 2019). With more than 30 percent of the country's land area considered as arable, more than half of the country's populace is reported to be living in rural spaces and are further inferred to be involved in agriculture (The World Bank 2022). Given its significance, the growth of the agriculture industry is considered as a key component for the nation's overall development (The World Bank 2020b). Concerns, however, are raised as a downward trend in the industry's indicators has been observed in recent years.

In 2020, it was reported that the agriculture industry contributed only 10.2 percent to the Philippines' Gross Domestic Product (GDP) (PSA 2020). As presented in Figure 1, it can further be observed that the three-year period 2018–20 alarmingly recorded the lowest figures for the industry's GDP contribution values (The World Bank 2020a).

Accordingly, this declining industry growth is attributed by Briones (2021) to the slow development of its factors of production—including the decrease in labor involvement—as well as the weakening total factor productivity. It is thus argued that the aging agriculture demographic and the lack of youth interest pose a great threat to the sustainability of agricultural production (Lumen 2020).

It has been reported that the average age of a Filipino farmer is 57 years (Lugtu 2022). With farmers predominantly past their prime, subsequent fears are realized as further research infers that older farmers often obtain lower yields, with lower technical efficiencies, and lower rates of technological adoption (Cabangbang and Quicoy 2019; Balogbog and Gomez 2020; DAR 2020; Diaz et al. 2021). Furthermore, with the current labor demographic, it is believed that the country may encounter a critical shortage of agriculturists in the next 13 years (BusinessMirror 2021). It is thus posited that the growth and development of agriculture is only attainable if a nation can tap the potential of its resilient and vigorous young workforce (FAO 2017).

The youth are considered as important stakeholders in the development process, given their great assets of resilience, resourcefulness, and perseverance (Udemezue 2019). They are further identified to be one of the key players to sustain agriculture with their energy, vitality, and innovative skills (Som et al. 2018; Afande, Maina, and Maina 2015). As such, the vital role of the Filipino youth in the development of Philippine agriculture is now becoming more evident. In the Philippines, "youth" is defined as individuals aged 15–30 years old (NYC 1995). According to the country's latest statistics, this youth demographic dominates the country's population at 29.3 percent (PSA 2017). However, despite their potential in numbers, concerns are also raised about the youth's lack of interest in agriculture.

Globally, it is reported that the youth hold a general disinterest toward the sector as it is believed that it is unable to meet the "kinds of lifestyles young people need, expect, and desire in the 21st century" (Udemezue 2019, 905). Studies indicate

Figure 1. GDP share of agriculture in the Philippines from 1960–2021

Source: The World Bank (2020a)

that most youth see agriculture as a poor man's activity, for someone who has not finished school, or as a last resort for academic underperformers (Mulema et al. 2021; Zidana, Kaliati, and Shani 2020; Anyidoho, Leavy, and Asenso-Okyere 2012; Njeru 2017; Chinsinga and Chasukwa 2017). Chipfupa and Tagwi (2021) also report that the youth perceive agricultural careers as an arduous job that offers minimal incentive. Even further, agriculture careers are often seen as lowly, dirty, and back-breaking jobs, which further lead to the younger generation foregoing agricultural careers as it is not "attractive" (Muthoni 2017; Zidana, Kaliati, and Shani 2020; Udemezue 2019).

In the Philippine setting, a research by Canlas and Pardalis (2009) reported that a 30.1 percent decrease has been recorded on the youth's participation in the sector from 1998–2006. Likewise, in the University of the Philippines Los Baños, the country's leading university for agriculture, a sharp decline in the share of agricultural students to the total university population is observed from 51 percent in 1980 to only 4.7 percent in 2012 (Quismundo 2012). Furthermore, most farmers in the Philippines are found to be discouraging their own children to take part in the industry by claiming that they shall not experience the physical and economic difficulties they have faced while working in the industry (Palis 2020). Farmer-parents further consider education as a stepping stone for rural out-migration (Manalo and van de Fliert 2013).

Consequently, studies also establish that most of the children of Filipino farmers are not interested in taking up agricultural professions after experiencing and seeing first-hand the economic hardships in the sector (Orbeta and Abrigo 2009; Palis 2020). To them, it will be better if they sell their parents' farmlands and use the money; they can earn to pursue different careers in cities or abroad (Manalo and van de Fliert 2013). While these studies infer the negative view of the youth who are already exposed to the sector, there is insufficient research available in terms of exploring what the general Filipino youth first thinks about the industry. While youth perceptions have also already been explored by some researchers, highlighting that the youth around the world are not homogenous (Mulema et al. 2021), understanding from the local contexts and considering local social norms are thus deemed highly important to offer tailored responses.

As such, this research was conceptualized to develop a thorough understanding of how young people relate to the agriculture sector. It aims to further identify variables that may be tapped to entice the local youth to engage in the industry and pursue careers in agriculture.

The process of career building is often posited to commence with an individual's decision to undertake a higher education degree related to the industry he/she aspires to be part of (Nyamwange 2016; Adinkrah and Fosu-Ayarkwah 2020). Thus, the selection of a college program to enroll in is seen as a vital starting point in the youth's career progression as he/she begins to discern a future profession for himself/herself (Murcia, Pepper, and Williams 2020).

Guided by the Social Learning Theory of Career Decision Making (SLTCDM) by Krumboltz (1979); Social Cognitive Career Theory (SCCT) by Lent, Brown, and Hackett (1994); and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003), this study proceeds from the hypothesis that an individual's sociodemographic characteristics, learning experiences, and perceptions of environmental conditions can significantly affect his/her career choice, particularly on the decision to enroll in an agricultural degree program.

Hence, this study was undertaken to: (1) examine the youth's exposure to agricultural information, their knowledge levels on different agricultural principles and issues, their social participation, and their experiences in the Philippine agriculture sector; (2) explore the youth's perception of agriculture and agricultural careers; and (3) analyze how the different factors established above affect the Filipino youth in choosing their future careers.

METHODOLOGY

Study Locale

The study was conducted in General Santos City, South Cotabato, Philippines from June to September 2022. The city belongs to the 12th administrative region of the country, more commonly known as SOCCSKSARGEN (PhilAtlas 2023), which was reported to be the fourth top producer of agricultural goods in the Philippines in 2021 (PSA 2022). General Santos City was specifically selected as it is considered the center for trade and commerce of Region XII and is classified as a highly urbanized city. At the same time, it is reported to be the region's premier agro-industrial hub with agriculture and fisheries as the primary drivers of the city's economy (BIMP-EAGA 2023). Given its perfect balance of urbanity and an agricultural economy, this locale has an ideal mix of rural and urban employment opportunities and career prospects for the purposes of the study.

Data Gathering and Methods

Adopting a descriptive case study approach, this study offers a lens through which the issues of youth and agriculture can be explored to offer illustrative insights. An extensive literature review was conducted to craft a questionnaire to be utilized for the study. Guided by related literatures, instruments were adopted and adapted[1], then tailor-fitted to meet the objectives of this research. Once established, the questionnaire was pilot tested.

The pilot test was posted online through a secure social survey website and a call for senior high school (SHS) pilot study respondents was published. The link was opened to accept responses for 24 hours. From the pilot test, the Cronbach's Alpha (for questions that had Likert scales) was calculated to establish instrument reliability. Using the Statistical Package for the Social Sciences (SPSS) software to analyze the responses, it was established that the Cronbach's Alpha of the instrument was at 0.69, which indicates that the items form a scale that has reasonable internal consistency reliability, consequently implying the reliability of the questionnaire.

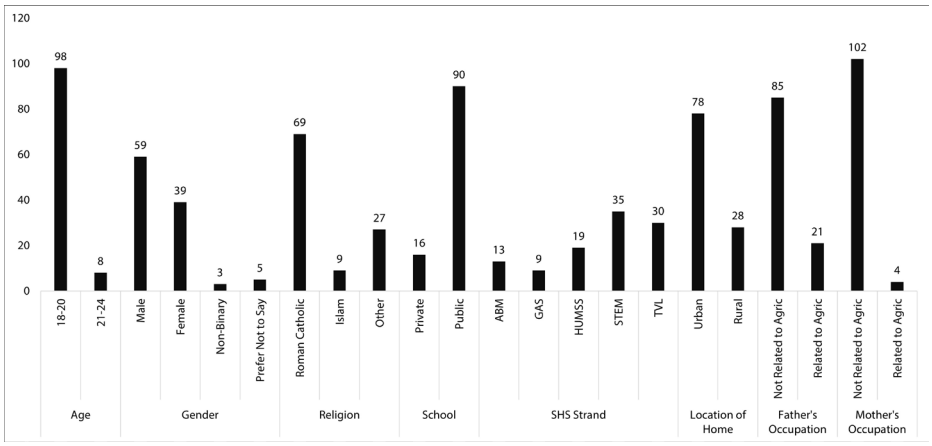
After establishing such, the researcher contacted different school principals and teachers in the locality (both private and public SHSs) and sought their assistance in the distribution of the survey link. The survey link was also posted publicly online through different social networking sites and was further disseminated online through local contacts who knew SHS students.

School and local contacts were informed about the inclusion-exclusion criteria of the research, specifically that a respondent must be (1) a resident of General Santos City; (2) SHS students who are either currently enrolled, have recently graduated, or incoming; and (3) over 18 years old. The online survey questionnaire was open to respondents from 1 June 2022 to 21 July 2022 and was able to gather 153 responses from 153 unique online users. However, 46 sets of responses did not meet the inclusion criteria of this study. Ultimately, only 106 response data sets were utilized in this research.

Figure 2 exhibits the sociodemographic characteristics of the survey respondents. From the 106 yielded responses, 98 respondents were aged 18–20 years old and 8 were 21–24 years old; 59 respondents identified themselves as male and 39 as female, while three regarded themselves as nonbinary, and five preferred to not say their gender. Furthermore, the majority were Roman Catholics; most of them were enrolled in public SHSs; and were mostly taking up the Science, Technology, Engineering, and Mathematics (i.e., STEM) SHS academic track, with the Technical-Vocational-Livelihood (i.e., TVL) track also not far behind. Most of the respondents reported living in urban areas, and only 25 respondents stated that either of their parents are employed in the agriculture industry.

1 Philippe et al. (2017); Inegbedion and Islam (2020); Mutinda, Chepngeno, and Mugendi 2021; Omotesho et al. (2017); Magagula and Tsvakirai (2020); Pelzom and Katel (2017); Njeru (2017); Vihari et al. (2020); Zidana (2020); and Mulema et al. (2021)

Figure 2. Sociodemographic characteristics of survey respondents



Key informant interviews were also undertaken to gather qualitative insights to substantiate the survey outputs. Purposive sampling was employed wherein professionals working in the agriculture industry, most especially those who were deemed to have been involved with the youth, were interviewed.

Data Analysis

Descriptive statistics were first utilized to present the quantifiable results of the online survey questionnaire. A thematic analysis was also employed to the answers gathered from open-ended questions.

A multiple linear regression (MLR) analysis was also employed to further analyze which of the multiple predictors or independent variables were determinant/s to an individual's career choice, using IBM SPSS. The empirical model of this study is presented below.

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 ... + \mu i$$

Where:

Y = Intention to enroll in an agriculture course
β = Coefficients to be estimated
$X1$ = Age
$X2$ = Gender (0 = male, 1 = female)
$X3$ = Religious affiliation (0 = Roman Catholic, 1 = Islam, 2 = others)
$X5$ = SHS track (0 = nonTVL, 1 = TVL)
$X7$ = Father's occupation (0 = not related to agric, 1 = related to agric)
$X8$ = Mother's occupation (0 = not related to agric, 1 = related to agric)
$X9$ = Social participation (0 = no, 1 = yes)
$X10$ = Prior experience (0 = no, 1 = yes)
$X11$ = Exposure to agricultural information (0 = none, 1 = yes)
$X11$ = Exposure to agricultural career information (0 = none, 1 = yes)
$X13$ = Level of knowledge regarding agriculture
$X13$ = Level of knowledge regarding agricultural careers
$X14$ = Level of economic perception regarding agriculture
$X15$ = Level of social perception regarding agriculture
$X16$ = Level of personal perception regarding agriculture
μi = 5% error term

Study Limitations

This research was limited to youths who can legally give consent (18–30 years old) in General Santos City. Additionally, this research was also limited to the use of online data gathering tools due

to proximity concerns. Lastly, with the COVID-19 pandemic pushing academic institutions to shift to online modes of teaching, this research was limited to use nonprobabilistic sampling techniques.

RESULTS AND DISCUSSION

Agricultural Learning Experiences and Knowledge of the Youth

Goemans (2014) argued that the youth's access to information and knowledge accumulation is crucial for addressing the main challenges currently faced in modern agriculture. As such, this research began with establishing the youth's current level of information engagement concerning the sector and their level of know-how toward agricultural constructs.

Probed about their exposure to agricultural information, the majority (78%) of the respondents reported that they have been introduced to agricultural concepts, while 22 percent of them claimed they have not. Of those who were exposed to agricultural topics, 68 respondents inferred that they have been made familiar to technical agricultural information, while 62 revealed that they have been exposed to nontechnical information. This infers that information is available for the youth about agriculture and that agricultural concepts are not foreign to them.

As to their sources of information, most of the respondents referred to classroom lectures (n = 67) as their main source of information, implying the critical role the academe plays in agricultural information dissemination.

"Stories shared to me by people I know" ranked as the second most common source of agricultural information, which corroborates Goemans' report (2014) that agricultural know-how, in may developing regions, are still communicated informally. This further infers that informal communication plays an almost equally vital role with formal setups in shaping an individual's knowledge level. This compellingly leads to the understanding of the important roles parents, guardians, and acquaintances play in building knowledge and perceptions of industries, careers, and professions (Esters and Bowen 2005). Notably, several youths in the locality (n = 29) are also found to be proactive in searching for information regarding the sector on their own, which signals interest. Figure 4 exhibits the local youth's other sources of information.

To assess their current level of knowledge toward agricultural constructs, questions that require a true or false response were posed in the questionnaire. Aggregate ratings are presented in Table 1.

It can be inferred from Table 1 that most respondents know common agricultural concepts, such as how farming and livestock management are part of the agriculture industry, how agriculture plays an important role in Philippine economy, and on climate change constructs, as exhibited by the high knowledge ratings at 2.98, 2.79, 2.77, and 2.73, respectively.

However, when asked about technical agricultural questions (sources of rice and pineapples) and the concepts of food security and food safety, respondents yielded only a medium level of knowledge with 2.06, 1.86, 2.21, and 2.24 average ratings, respectively.

Ultimately, it was found that the youth respondents have only a medium level of knowledge, with an overall rating of 2.33. This finding came as a surprise, given their previously established high level of exposure to information. This implies that their high exposure to agricultural information is not directly translated

Figure 3. Rate of exposure to agricultural information

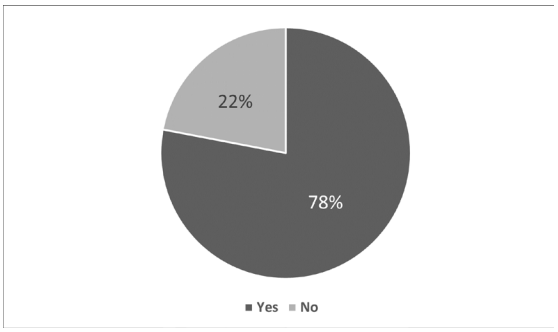
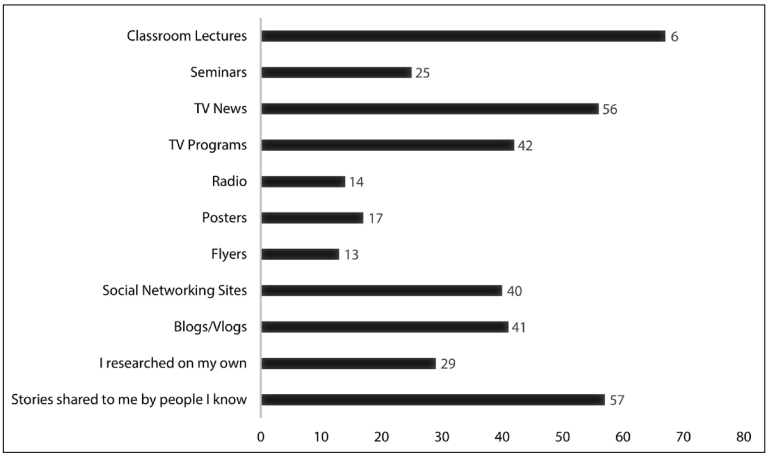


Figure 4. Sources of agricultural information (multiple responses)



to agricultural knowledge. Thus, it is rationalized that their current know-how is an indicator of low interest and low mental prioritization, which leads to their poor information recall (Wade and Adams 1990).

Furthermore, it is interesting to note that while the respondents are highly knowledgeable of the industry's production aspects, they only exhibited medium ratings on the industry's social issues. While they had high ratings for ideas about general agriculture functions (crops and livestock production), the role the industry plays in the economy, and climate change, they recorded only medium average scores on the questions posed pertaining to the sources of locally prominent products like rice and pineapples. This alarming finding is similar to the findings of Boleman and Burrell (2003) where some student-respondents believed that milk comes from grocery stores, instead of cows.

Medium knowledge levels were also recorded for the statements regarding different social topics relating to agriculture, mirroring the findings of Syeda et al. (2021). Considering that agriculture is a broad industry that encompasses different sectors, the pressing need for the younger generation to realize that there is a social science aspect of agriculture is advocated for (DeWalt 1988; Krishna and Kumbhare 2019).

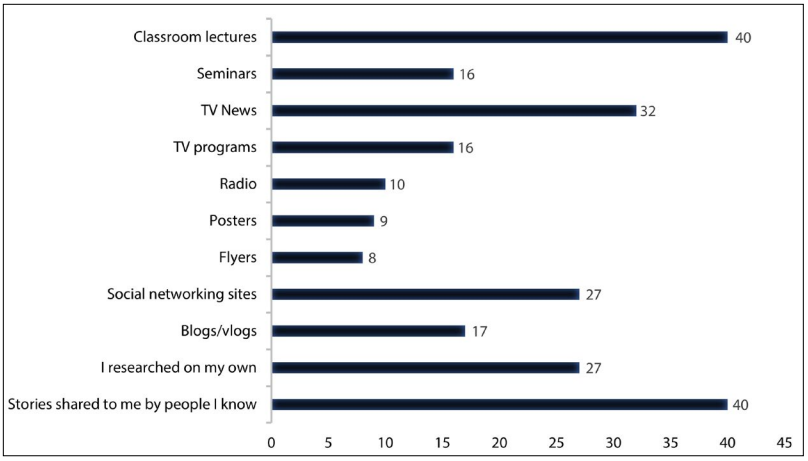
Moving forward, in exploring the youth's exposure to information specifically on agricultural careers and job opportunities, 58 percent of the respondents claim to have been made aware of possible occupations in the industry, while 42 percent revealed that they were not given any kind of information regarding this matter. This implies that the majority (by a slight margin) of the young people in the city are made aware of agricultural career opportunities.

Similar to their sources of information on agriculture, classroom lectures (n = 40) and "stories

Table 1. Knowledge level ratings of Filipino youth toward agriculture (n = 106)

Statement	Average Rating	Description	Std Error
Agriculture involves farming	2.98	High	0.01
Agriculture involves taking care of animals/livestock	2.79	High	0.04
Agriculture plays a key role in the Philippine economy	2.77	High	0.05
Rice comes from a grass	2.06	Medium	0.09
Pineapples are picked from trees	1.86(r)	Medium	0.07
I know about climate change; and if asked, I can easily define it	2.73	High	0.05
I can define food security; and if asked, I can discuss at least one issue related to it	2.21	Medium	0.08
I know about the concepts behind food safety; and if asked, I can discuss at least one issue related to it	2.24	Medium	0.07
Mean of Means	**2.33**	**Medium**	-

Figure 5. Sources of agricultural creer information (multiple responses)



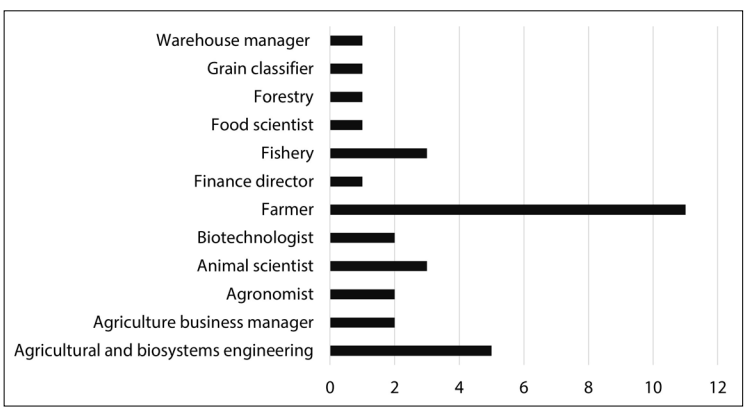
shared to me by people I know" (n = 40) also took the lead as their main sources of information regarding agricultural careers. Interestingly, 27 respondents also stated that they researched agricultural career information on their own. Figure 5 exhibits the local youth's other sources of agricultural career information.

However, when asked if they can confidently name and describe one job in the agriculture sector, only 24 percent of the respondents answered in the affirmative. This is similar to the previous findings on the local youth's knowledge sources and rating toward agriculture. Their exposure to information is found not to have been effectively translated into cognitive knowledge. These disparate answers are then again rationalized by deliberating that the industry insights presented to them lacked lasting impacts, which led to poor recall or that they are still unsure of their ideas, further supporting the views of Wade and Adams (1990).

Furthermore, out of those who responded that they were confident to describe one career in the agriculture sector, the largest group (34%) identified that being a farmer is a primary industry career opportunity. Other leading answers also revolve around the production tasks and professions in the industry. This data alarmingly sets out that most of the youth are aware only of professions in the production aspect of agriculture. While correct, this exhibits the youth's lack in know-how of the complex chain the agriculture industry operates in and the vast opportunities for employment it entails. These also further mirror the results of the study of Secretario (2021), which reveals that most of the Filipino students investigated still see agriculture as a field that corresponds to "just planting". Figure 6 presents other agricultural careers the respondents know of.

To investigate their state of current engagement with the industry, respondents were asked about their social participation and hands-on experiences. When asked if they were acquainted with anyone employed in the sector, the majority of the respondents (57%) answered positively, while 43 percent answered no. This indicates an average level of social participation. It has been established that a population who actively partakes in social programs are more likely to meet different types of people who they can learn from (Vihari et al.

Figure 6. Agricultural careers the Filipino youth are aware of



2020). These results suggest an opportunity that the locality can explore.

However, mindful of other interpretations, it can also entail a negative effect once the people who are working in the industry, who are supposedly the source of knowledge and insights, do not share a favorable view of the sector. This is established in the study of Palis (2020), wherein it is the farmer parents themselves who discourage their children to go into farming, and the study of Chachere et al. (2018) where social participation was a negative determinant to the youth's attitude toward agriculture.

Thus, it is important to develop the agricultural system itself in a way that ensures that those already engaged and employed within it would share positive insights. This could then serve as a sound encouragement to the younger generation.

Furthermore, when asked about their prior experiences, only 40 students (37%) claimed that they have had practical exposure to agricultural activities, while 66 respondents (63%) answered that they have not, which indicates significantly low practical participation in the industry. This finding is rather troubling, considering that low practical experience is found to negatively affect their interest in the industry Luckey (2012). This observation suggests the need to expose the younger generations to the practical side of the sector to ensure that they can develop a deeper sense of connection, familiarity, and, ultimately, interest in the sector.

From all this, it is established that agricultural literacy among the youth in the region is low, even though they have established that they were exposed to information. Findings further suggest that they have average social participation and low practical experience.

Youth Perception of Agriculture

According to the study of Magagula and Tsvakirai (2020), perceptions are seen as a critical determinant for a person's inclination toward specific professions. Word association is a tool used in psychology and sociology to establish an individual's conceptual structures by his/her spontaneous and unrestricted thought process (Hovardas and Korfiatis 2006). As such, this study preliminarily investigated the views of the younger people toward agriculture as a concept by analyzing the main words they associate with it. Figure 7 presents the most attributed words to agriculture.[2]

It can be observed from Figure 7 that the majority of the youth immediately thought of the words "farmers" and/or "farming" (42%). This corroborates the study of Secretario (2021), which states that most Filipino youth only know of "just planting" as a career in the sector. While these views are correct, given the definition of agriculture,[3] there is a need to promote a holistic view of the sector that sees agriculture to encompasses the whole food system. This includes activities upstream of farms,[4] downstream of consumers,[5] and everything in between[6] (Glover and Sumberg 2020). Other words were also reported by the respondents at low levels of frequency, such as the

Figure 7. Words the Filipino youth associated with agriculture

2 The biggest and most prominent texts are the most frequently answered, while the smallest and least prominent texts are the least mentioned.

3 The science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products (https://www.merriam-webster.com/dictionary/agriculture)

4 e.g., input supply, plant breeding

5 e.g., further value-adding, waste disposal

6 e.g., policymaking and regulation

words "plants" (9%); "nature" (8%); "food" (7%); economics" (5%); and "interesting", "amazing", "underappreciated", and "hard work" (all 1% each).

Probed to explain their word attributions further, three main themes were established from their responses: agriculture is a productive undertaking, contributes to the economy, and helps keep a healthy ecosystem.

First, the respondents deem agriculture as a productive undertaking, supplying society with its physiological needs. This infers that the youth see the sector as a critical player for sustaining the prerequisites of the current and future generations, most especially in alleviating hunger, as with the study of Mendoza (2022). The following are representative responses along this line:

> *I associated the term "cultivation" with agriculture because I believe that the study and the whole process of it involves cultivating lands, which mainly affects the growth of plants and livestock. Moreover, cultivation is an important factor in the production of agricultural goods, the foundation for most of our products such as cotton, rice, paper, and so forth (respondent 96303734).*

> *Since agriculture is also the process of producing food, I immediately thought the word "crops" is associated with it (respondent 96133504).*

> *When I hear the word "agriculture", the first thing that comes to mind is the word "farmer" because I remember being told as a child that they are the ones responsible to produce rice here in the Philippines. Basically, when I talk about agriculture, I often associate it with farmers planting rice and crops such as bananas and pineapples (respondent 96142010).*

Second, most respondents also attribute agriculture to the economy. This infers that they are aware of the role the industry plays in economic development and how the sector can be an effective instrument to eradicate poverty, similar to the findings of Mendoza (2022). Some representative responses are the following:

> *Since I live in the Philippines where agriculture is relevant, I immediately think of the word "economy" because through agriculture, I think the country's economy could grow (respondent 96133635).*

> *Agriculture is the primary source of food, primary source of materials to create new products, primary source of employment for Filipinos (respondent 96193497).*

> *Farmers are the backbone of our society and agriculture is the backbone of the economy (respondent 97431044).*

Lastly, the youth also understand the role agriculture plays in keeping a healthy ecosystem. This implies that they are also cognizant of how the sector can play a vital role in keeping the sustainability of different ecosystems and the whole planet, as with the results of the study of Mendoza (2022). Sample responses are the following:

> *Because when agriculture is mentioned, I immediately think about the world, the animals, and the people that breathe (respondent 96197794).*

> *There are many important things in and uses of agriculture. Agriculture provides us with food from the natural resources that we harness. Agriculture is a business that is productive through centuries, and we get money and wealth through it. But now, we must also think about protecting and preserving the land from which we will get our food and basic needs (respondent 96200313).*

These three major themes identified are considered valuable findings, as they imply that the youth have a certain degree of awareness as to the critical roles the agriculture industry plays in alleviating hunger, eradicating poverty, reducing economic inequalities, and ensuring sustainable environments. Consequently, it impresses on them how they can be at the forefront of addressing all these once they engage in the sector. Hence, these could all be tapped by policymakers to draft

programs that highlight the role of the agriculture industry across different sectors.

When asked further why they think they expressed their particular word associations, the youth respondents' answers varied. In analyzing these, three themes of their sources of associations were also identified, namely: social-embeddedness, environmental observations, and educational discourses. For social embeddedness, respondents pointed to cultural upbringing and general stereotypes.

> *It is a notion in my community that when it comes to agriculture, the word "farming" is always associated with it (respondent 96135748).*

> *I think I would always think of farming when it comes to agriculture because I always heard it when I was young (respondent 96133233).*

For environmental observations, respondents attributed their perceptions to what they have experienced, seen, or observed growing up.

> *The words I have mentioned above (farming) are the first to come to mind because my father works in the agriculture sector, and he often shares that his work involves farming and livestock (respondent 96133499).*

> *My father is a farmer. He usually plants rice; that's why whenever I read or see the word "agriculture", crops come into mind (respondent 96136093).*

As for educational discourses, most respondents attributed their perceptions to what they have learned in formal academic settings.

> *The reason why I first associate the word "farming" in agriculture is because I've grown to connect those two words together. As shown throughout the years from textbooks in school (respondent 96228053).*

> *This is what we usually learn about, especially because our topics usually focus on agricultural crops when we talk about agriculture (respondent 97426657).*

From these qualitative statements, it emerges that their general views of the sector are deeply rooted from the community and society that surrounds them, their family, and the environment they live in, and in their scholastic discussions.

To quantify their perceptions further, Figure 8 presents the perceptions the youth hold toward agriculture considering economic themes.

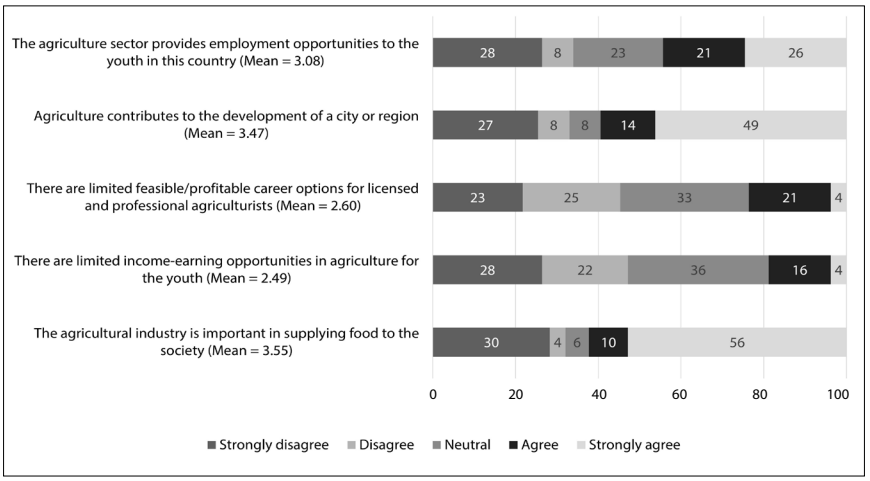
From their responses, it could be inferred that nearly half (47%) recognize that there are ample employment opportunities in the industry, whereas a smaller minority (36%) believe otherwise, with 23 percent being neutral in their perception. Similarly, nearly half (48%) believe that there are possible profitable career options for professional or licensed agriculturists, against only 25 percent who do not, while a third (33%) have a neutral perception. Half (50%) of the youth respondents see adequate income-earning opportunities in the sector for the youth, against only 20 percent who do not, while 36 percent have a neutral opinion. These results indicate that while overall sentiments on personal opportunities in agriculture are not strong, there are more who hold a positive view than those who do not.

On a brighter note, the majority of the respondents (63%) still perceive the industry as an important economic driver. They also further believe that agriculture plays a critical part in rural development and food security (66% of respondents). These are in line with the findings of Secretario (2021) that the majority of their respondents still see agriculture as a key player in alleviating hunger and poverty. These are also very important findings, which corroborate previous qualitative statements that indicate how the sector is still seen as an effective instrument to eradicate poverty.

Moving forward, most of the respondents are also found to hold favorable opinions considering the social constructs that surround the industry, as presented in Figure 9.

From Figure 9, it could be established that most of the youth disagreed that the agriculture industry is fit only for men, the uneducated, the underachievers, the old, and the poor. These starkly contradict the findings of reviewed literature wherein they claim that the youth view agriculture

Figure 8. Economic perceptions of the Filipino youth toward agriculture

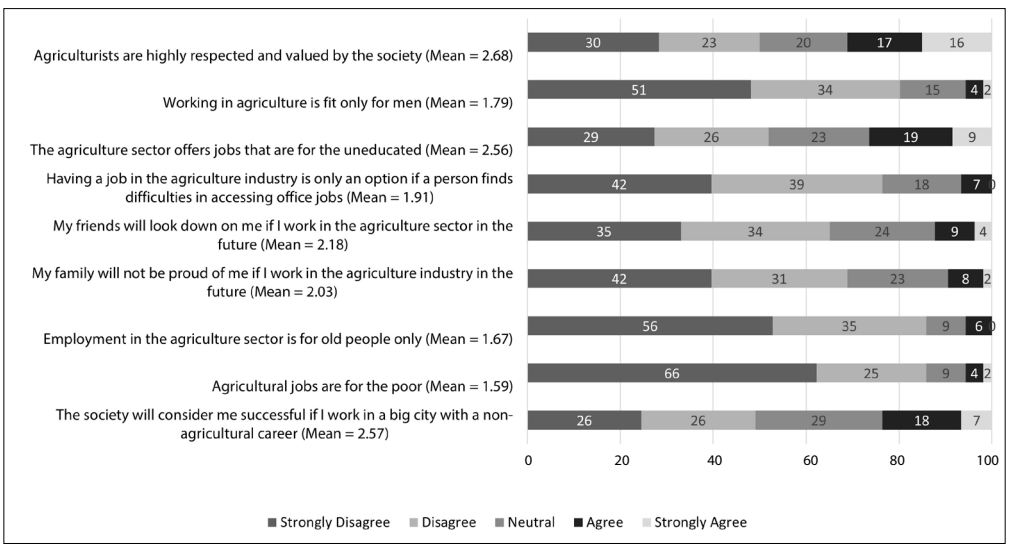


as a practice dictated by gender, educational attainment or its nonfulfillment, adulthood, or a person's economic standing.

A slight majority also disagree that society equates success with working in a non-agricultural job in the city, which implies that there is still a prevailing, albeit weak, expectation of respect and appreciation from society for taking up an agriculture career. These findings indicate that while the local youth see agricultural careers in a positive social light, there is weaker expectation (but nonetheless comprising a slight majority) that the general society will think highly of them once they engage in it. These sentiments are attributed to common Filipino social constructs, or how agricultural courses are treated as inferior to other degree programs and how students taking up agricultural subjects are treated as second-rate citizens (The Manila Times 2013). As such, while the respondents themselves generally view the sector as a positive undertaking, there is weaker attraction for an agriculture career based on the expected respect and admiration they can gain for it.

These observations imply that there is a need to shift the predominant cultural and social narratives about agriculture prevailing in the

Figure 9. Social perceptions of the Filipino youth toward agriculture



local youth. Useful initiatives might include more comprehensive positive information dissemination about the sector through both formal and informal means. There may also be a need for a more appropriate representation of industry players in general in order to harmonize society's views on the sector (Secretario 2021).

Figure 10 shows the responses of the local youth toward constructs that represent their own direct personal perspective about a career in the agriculture sector, including their own fitness for it.

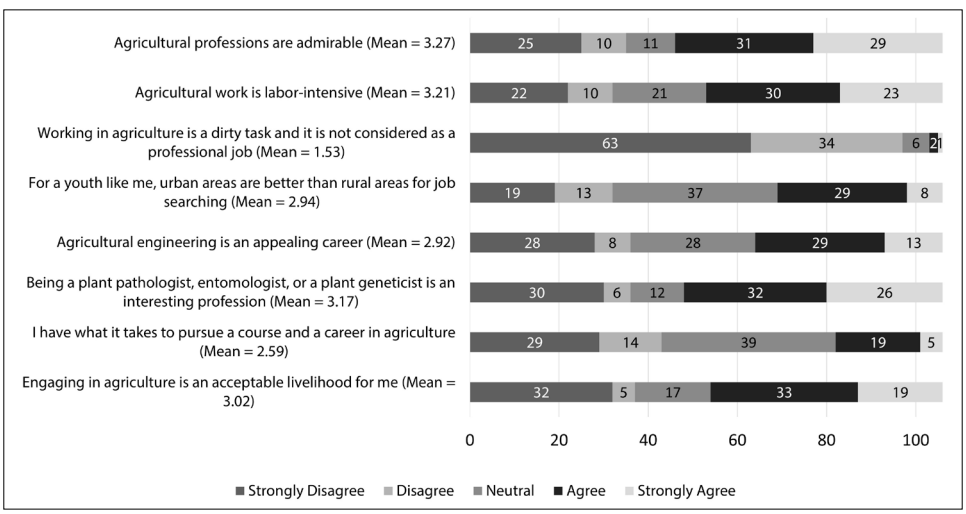
Most of the respondents agreed that engaging in agriculture is an acceptable lifestyle for them, mirroring the findings of Magagula and Tsvakirai (2020). Although more than a third of respondents expressed interest in selected agricultural professions, a larger percentage do not find these appealing or interesting, i.e., 42 vs. 36 percent in agricultural engineering, and 58 vs. 36 percent in the case of plant pathology, entomology, and plant genetics. Less than a fourth of the youth respondents believed that they are equipped with the right knowledge and skills to engage in agriculture. This is found to mirror prior findings wherein their knowledge toward agricultural constructs is only at average levels and their prior experiences are significantly low (see Figure 3). This ultimately implies that while they generally hold positive personal views of the sector, they are unsure of their capability and lack interest in taking direct part in the industry given their current level of know-how and practical abilities. This shows the importance of education and capacity building to equip young people with basic knowledge and skills needed in agriculture at or even before the secondary school level, i.e., before they reach the point of deciding on their career paths.

In view of all the perceptions held by the local youth on agriculture as revealed in the preceding discussion, there is clear need to establish and strengthen programs that push for a more favorable economic, social, and personal view of the agriculture sector. This will not only further improve the younger generation's perception and interest toward the sector, but also effectively equip them toward productive and impactful involvement with agriculture.

Determinants of Agricultural Career Choice

Career decision making is argued to be a significant marker of a person's life. This process is established to begin when a person decides what to pursue for their undergraduate degree, aligned to an industry they aspire to be part of in the future (Nyamwange 2016; Adinkrah and Fosu-Ayarkwah 2020). Considering the intricacy of this process, several theories have been established on

Figure 10. Personal perceptions of the Filipino youth toward agriculture



career decision-making, which served as the theoretical basis of this research.

To ensure optimum model quality, a Pearson Product Moment Correlation Coefficient was employed to test for collinearity among the independent variables. Consequently, variables with significant ($p<0.05$) and positive collinearities were removed.The utilized research model was found to result in an R-squared value of 0.22. This value implies that 22 percent of the variation of the intention to enroll can be explained by the variations in the independent variables. While this indicates relatively low explanatory power, the model could nonetheless provide some useful insights.

Exploring the youth's intention to enroll in agricultural undergraduate programs, students were posed with the question if they already had set a college course in mind. From this query, it was established that 84 percent had already decided on which career path they would take, and 16 percent had not. Additionally, out of the 84 percent who were decided, 76 percent identified courses that are not related to agricultural sciences, while only 8 percent referred to courses that may fall under the colleges or schools of agriculture. This indicates that even though most of the youth respondents hold an average level of knowledge and medium-to high levels of perception toward the agriculture industry, most still do not consider agricultural courses as an active choice in selecting college courses and life professions. Investigating this, Table 2 presents the results of the MLR.

From the multiple regression analysis, it can be inferred that the youth respondents' age, social participation, economic perceptions, and personal perceptions are statistically significant ($p<0.05$) to a youth's intention to enroll in tertiary agricultural programs.

Age yielded as a positive significant variable with the student's intention to enroll ($p<0.05$), which infers that as the youth gets older, his/her chances of engaging in the sector also increases. This might be explained by older individuals being likely to have higher rates of exposure to agricultural information and/or experiences in the sector (Mulema et al. 2021).This further allows them to realize the opportunities in the sector and the benefits they entail (Adeyanju et al. 2021).This finding corroborates the SLTCDM (Krumboltz 1979), the SCCT (Lent, Brow, and Hackett 1994), and the UTAUT (Venkatesh et al. 2003) as all these theories posit the significant influence of sociodemographic characteristics of individuals as they decide on their future career paths.

Social participation is also found to play a positive significant role in the local youth's intention to enroll ($p<0.05$). This implies that the more socially involved a youth member is with people who are working in the agriculture sector, the more likely he/she is to enroll in agricultural programs. For instance, individuals who have role models, friends, or have someone they know engaged in the agriculture sector have higher chances of enrolling in agricultural courses as they are made more aware of the opportunities in the sector. These findings are similar to the results of the studies of Vihari et al. (2020) and Vasava et

Table 2. Multiple regression analysis summary for sociodemographic, knowledge, and perception variables in predicting youth intention to enroll

Variable	B	SEB	β
Age	.043	.022	.193*
Gender	–.020	.045	–.046
Religion	.037	.032	–.124
SHSTrack	–.054	.060	0.092
FatherOccup	–.076	.071	–.115
MotherOccup	.117	.151	–.084
SocialParticipation	.120	.055	.225*
Experience	–.006	.062	.011
AgricInfoExposure	.045	.068	.069
AgricCareerInfoExposure	.053	.059	.098
AgricKnowledge	.022	.109	.021
AgricCareerKnowledge	.085	.069	.137
EconomicPerception	–.117	.057	–.328*
SocialPerception	.022	.051	.045
PersonalPerception	.130	.064	.316*

Notes: R2 = .22; F = 1.765; p=0.05; * = p<0.05
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al. (2015), which report that social engagement increases the chances of an individual to engage in the agriculture industry. This finding further corroborates with the SLTCDM (Krumboltz 1979) and the SCCT (Lent, Brow, and Hackett 1994), as both theories emphasize the impact of learning experiences on career decision-making.

Personal perceptions were also found to be positively significant ($p<0.05$) to a youth's intention to enroll in tertiary agricultural programs. This indicates that those who recorded high personal perception ratings are more likely to enroll in agricultural courses. Those who find agricultural professions admirable and those who deem that they have what it takes to pursue an agricultural course and careers are more disposed to pursuing the agricultural career path. As such, it is important to empower the youth by equipping them with the right know-how and skills and by providing them an encouraging socio-environment to positively impact their view of the sector to increase youth engagement (Inegbedion and Islam 2020; Okiror and Otabong 2015).

Lastly, it was found that economic perceptions on agriculture also played a significant role in determining a youth respondent's intention to enroll ($p<0.05$). However, surprisingly, it is found that it is negatively related to the intention to enroll. That is, for every unit increase in their economic perception, the less likely they are to enroll in agricultural bachelor's degrees. This suggests that the more the respondents believe that there are limited employment opportunities, income-earning activities, and feasible career options in the sector, the more they are inclined to engage in the agriculture industry. This appears counterintuitive and surprising and goes against the studies of Magagula and Tsvakirai (2020); Vihari et al. (2020); and Chachere et al. (2018). These report that the higher the economic perceptions held by their youth respondents, the higher is their engagement in agriculture.

This apparent contradiction might possibly be attributed to peculiar circumstances during the conduct of the study. The data gathering was conducted at a time the Philippines was facing a major shift in national governance and a decline in agricultural contribution. It is possible that those who intended to enroll in agricultural programs actually found motivation in the declining economic performance of the sector.

This view is supported by a key informant who had previously worked as a faculty member of the college of agriculture of a local state university but transferred to the local government unit's agriculturist's office. The key informant stated: "Being once in the academe, I have interacted with students. I noticed that it is the sons and daughters of farmers who will choose agriculture as their college course. And most times, it is these students who have seen the difficulty in the sector, but they still choose to enroll in agriculture to help their parents."

Thus, it might be hypothesized that those with low economic perceptions toward agriculture actually deem it as a challenge that motivates them to seek to contribute to finding solutions by being part of the sector. This is consistent with the findings of Afande, Maina, and Maina (2015), who found the youth to be risk-takers.

This point was also exemplified by one key informant who is a youth agricultural entrepreneur herself and was one of the winners of the Department of Agriculture's National Young Farmers' Challenge Fund 2021. She said that she still chose agriculture as a profession because "I wanted to try to become a solution to the ongoing food crisis. As a youth myself, I already see the opportunity in agriculture and in agribusiness, because it is not only me that will benefit from it, but also our customers and our local economy. And I am happy to be an instrument for the progress of our local economy by providing opportunities for employment in the locality." This motivation for pursuing studies in agriculture would be a good subject for further empirical validation in future research.

Overall, the statistically significant relationship between these three types of perceptions and youth career choices in agriculture support the ideas within the SCCT (Lent, Brown, and Hackett 1994) and UTAUT (Venkatesh et al. 2003), which both emphasize the influence of individual perceptions on career decision-making.

SUMMARY AND POLICY RECOMMENDATIONS

Evidence from the survey attests that the majority of the youth respondents have been exposed to technical and nontechnical agricultural information through both formal and informal means. However, it is inferred that this information exposure has not been effectively translated into inherent know-how as the respondents exhibited only an average agricultural knowledge. Limited knowledge was also realized in terms of their familiarity with agricultural professions, highlighting that they only predominantly referred to production-based employment, such as being a "farmer". These are particularly relevant findings, considering that most studies confirm that exposure to agricultural information subsequently leads to higher agricultural literacy (Luckey 2012; Jean-Philippe et al. 2017). As such, there is a compelling need to look back at the methods and approaches on how agricultural information is extended to the youth to ensure higher engagement, absorption of information, and literacy rates.

Average social participation rates were also found among the youth. Circling back to their high regard of their informal sources of agricultural information, this finding is considered as an opportunity that can be tapped to promote agricultural information-sharing. It was also revealed that the youth had low levels of industry hands-on experience. As such, it is recommended that approaches on how practical agricultural skills can be built on the local youth also be explored.

Through a preliminary word association test, it was apparent that the youth highly attribute the term "agriculture" to "farming". It was further established that they perceive agriculture to be an important economic sector and a vital factor for environmental sustainability. Thus, the youth have the potential to realize the critical role they can play in developing the industry, the nation, and the world when they engage in agriculture.

Based on economic considerations, most of the youth see ample employment opportunities in the sector, and nearly half of respondents believe there are job options and income-earning prospects in becoming agriculturists, as against only about a third who see otherwise. Still, the positive perception on job prospects is not strong even as it prevails over negative perceptions, with a large segment having a neutral sentiment.

From a social lens, it was also established that the youth hold a positive perception toward the sector. They believe that the sector is not restricted to men, the poor, the underachievers, and the uneducated. While the respondents generally view the sector as a positive undertaking, there is weaker attraction among them for pursuing an agriculture career based on the expected respect and admiration they can gain from it.

On a personal level, the younger generation appear to mostly agree that agriculture is an acceptable lifestyle for them. However, most of the respondents deem that they are not personally qualified to engage in the sector with their current know-how and skills. This finding corroborates the previous data that the youth in the locality have low knowledge and low rates of prior experiences in agriculture.

Quantitatively, it is important to note that only a small fraction of the respondent population signified their intention to enroll in agricultural degree programs. This indicates that most respondents still do not consider agricultural courses as an active choice in selecting college programs and life careers.

Through a multiple linear regression analysis, age was found to be a positive, significant sociodemographic factor that affects an individual's intention to enroll in agriculture courses. As expected, social participation and personal perceptions were found to have a positive significant relationship with the respondents' intention to enroll in agricultural courses. On the other hand, economic perceptions on the sector were found to have a significant negative relationship, implying that a more negative perception on the sector leads young people to enroll more in agricultural courses. While this finding may seem counterintuitive and runs counter to other previous research, it may find explanation in a "sense of mission" the youth may have to help

find solutions to the sector's difficulties by being part of it. There is anecdotal evidence that such motivation is not unrealistic and is consistent with previous findings of risk-taking behavior among the youth. These observations and inferences can be an important subject for further research.

Taken all together, the study results support the different career decision-making theories that it draws upon. As such, it is inferred that deliberate intervention programs through joint efforts of different industry stakeholders are imperative to increase the interest of the youth toward the agriculture industry and entice them to take it up as a career.

Academic sources have already been established and available for the intellectual enrichment of the youth in agricultural studies. Nonetheless, strengthening and developing the academic curriculum to ensure that it provides a holistic view of the industry and further highlighting the different employment and entrepreneurial opportunities the sector provides must be a priority if the youth are to consider agriculture as an empowering and viable career choice.

Programs that push for experiential learning should also be established and enhanced to build the practical capacity and develop the confidence of the youth to engage in the industry. It will supplement the intellectual gains they attain from curriculum strengthening. Also considering that age plays a significant factor in determining the local youth's career choices, these interventions are best employed early in the youth's academic journey, well before they make their career decisions.

Furthermore, a more appropriate representation of agriculture and agribusiness in the public view is critical to ensure that the whole society can shift away from a demeaning and prejudiced view on agriculturists. This is essential to widening appreciation of and interest in the sector, especially among the youth, so that more of them pursue it as a career.

Lastly, while this study focused on how the local youth perceive agriculture as a career choice, the greater need is to strengthen the entire agriculture sector to ensure that the youth realize the genuine benefits, potentials, and opportunities that the sector offers. Mirroring the views of Secretario (2021), it is acknowledged that building the knowledge and positive perceptions of the youth toward agriculture is not the end goal, but just a means to ensuring sustainable agricultural development. As such, it is necessary for the industry stakeholders to build an inclusive, sustainable, and resilient agriculture sector by providing appropriate policies, support, and assistance. This should consequently lead the youth to choose, out of their own volition, to engage with the agriculture industry.

REFERENCES

Adeyanju, D., J. Mburu, D. Mignouna, and K. J. Akomolafe. 2021. "Determinants of Youth Participation in Agricultural Training Programs: The Case of Fadama Program in Nigeria." *International Journal of Training Research* 19(2): 142–166.

Adinkrah, B.K., and C. Fosu-Ayarkwah. 2020. "A Study on Factors Influencing the Career Choices of Students in Senior High Schools in Ghana: The Case of SHS Students in Abuakwa South Municipality." *Journal of Education and Learning Technology* 1(1): 29–38. DOI:10.38159/jelt.2020054

Afande, F.O., W.N. Maina, and M.P. Maina. 2015. "Youth Engagement in Agriculture in Kenya: Challenges and Prospects." *Journal of Culture, Society and Development* 17: 1-17

Anyidoho, N.A., J. Leavy, and K. Asenso-Okyere. 2012. "Young People's Aspirations in Agriculture: A Case Study of Ghana's Cocoa Sector." *IDS (Institute of Development Studies) Bulletin* 43(6), 6 November 2012. Oxford, UK: Blackwell Publishing Ltd. Accessed 1 June 2022. https://www.youthpower.org/resources/perceptions-and-aspirations-case-study-young-people-ghana%E2%80%99s-cocoa-sector

Balogbog, K.J.M., and N.U. Gomez 2020. "Determinants of Productivity and Technical Efficiency of Upland Rice Farming System in Sarangani Province, Philippines." *Mindanao Journal of Science and Technology* 18(2): 125–137.

BIMP-EAGA (Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area). 2023. "Green City Action Plan for General Santos City

Launched." *BIMP-EAGA Article,* 2 May 2023. Accessed on 17 December 2023. https://bimp-eaga.asia/article/green-city-action-plan-general-santos-city-launched

Boleman, C.T., and F. Burrell, Jr. 2003. "Agricultural Science Fairs: Are Students Truly Learning from This Activity?" *Journal of Extension* 41(3).

Bocquet-Appel, J.P. 2011. "When the World's Population Took Off: The Springboard of the Neolithic Demographic Transition." *Science* 333(6042): 560–561. DOI: 10.1126/science.1208880

Briones, R.M. 2021. "Philippine Agriculture: Current State, Challenges, and Ways Forward." *PIDS Policy Notes* 2021-12. Manila: Philippine Institute for Development Studies.

BusinessMirror. 2021. "PHL Faces 'Critical' Lack of Farmers in 12 Years." *Top News*, 30 August 2021. Accessed 15 November 2021. https://businessmirror.com.ph/2021/08/30/phl-faces-critical-lack-of-farmers-in-12-years/

Cabangbang, J.A., and C.B. Quicoy. 2019. "Assessment of the Factors Affecting the Efficiency of Yellow Corn Farmers in Selected Provinces in the Philippines." *Journal of Economics, Management & Agricultural Development* 5(2): 69–77.

Canlas, M.E.L., and M.C.R. Pardalis. 2009. "Youth Employment in the Philippines." *ILO Asia-Pacific Working Paper Series.* Manila: International Labor Office Subregional Office for South-East Asia and the Pacific. https://www.ilo.org/public/libdoc/ilo/2009/109B09_388_engl.pdf

Chachere, G.S., V.V. Gohad, R.M. Bhoyar, and K.K. Bhagat. 2018. "Attitude of Rural Youth Towards Farming as a Major Occupation." *International Journal of Chemical Studies* 6(4): 2789–2791.

Chinsinga, B., and M. Chasukwa. 2017. "Agriculture and Youth Unemployment in Malawi." *PAS Policy Brief* Vol. 1 No. 2, March 2017. Malawi: Department of Political and Administrative Studies (PAS), Chancellor College.

Chipfupa, U., and A. Tagwi. 2021. "Youth's Participation in Agriculture: A Fallacy or Achievable Possibility? Evidence from Rural South Africa." *South African Journal of Economic and Management Sciences* 24(1): a4004. http://dx.doi.org/10.4102/sajems.v24i1.4004

DAR (Department of Agrarian Reform). 2020. "Castriciones Appeals to Farmers Not to Leave Agriculture." *DAR News Center*, 11 December 2020. https://www.dar.gov.ph/articles/news/102156

DeWalt, B.R. 1988. "Halfway There: Social Science in Agricultural Development and the Social Science of Agricultural Development." *Human Organization* 47(4): 343–353. http://www.jstor.org/stable/44126740

Diaz, A.C., N. Sasaki, T.W. Tsusaka, and S. Szabo. 2021. "Factors Affecting Farmers' Willingness to Adopt a Mobile App in the Marketing of Bamboo Products." *Resources, Conservation & Recycling Advances Journal* 11(200056). https://doi.org/10.1016/j.rcradv.2021.200056

Esters, L., and B.E. Bowen. 2005. "Factors Influencing Career Choice of Urban Agricultural Education Students." *Journal of Agricultural Education* 46(2): 26–35. DOI:10.5032/jae.2005.02024

FAO (Food and Agriculture Organization of the United Nations). 2017. *The Future of Food and Agriculture: Trends and Challenges*. Rome: FAO.

Federico, G. 2008. "Feeding the World: An Economic History of Agriculture, 1800–2000." *Princeton Economic History of the Western World*. Princeton and Oxford: Princeton University Press. https://www.jstor.org/stable/j.ctt7rh71

Glover, D., and J. Sumberg. 2020. "Youth and Food Systems Transformation." *Frontiers in Sustainable Food Systems* 4(101): 1-15. https://doi.org/10.3389/fsufs.2020.00101

Goemans, C., 2014. "Access to Knowledge, Information and Education." In *Youth and Agriculture: Key Challenges and Concrete Solutions*. Rome: FAO in collaboration with CTA and IFAD.

Hovardas, T., and K.J. Korfiatis. 2006. "Word Associations as a Tool for Assessing Conceptual Change in Science Education." *Learning and Instruction* 16(5): 416–432. https://doi.org/10.1016/j.learninstruc.2006.09.003

Inegbedion, G., and M.M. Islam. 2020. "Youth Motivations to Study Agriculture in Tertiary Institutions." *The Journal of Agricultural Education and Extension* 26(11): 1–16. DOI:10.1080/1389224X.2020.1773285

Jean-Philippe, S., J. Richards, K. Gwinn, and C. Beyl. 2017. "Urban Youth Perceptions of Agriculture." *Journal of Youth Development* 12(3): 1–17. https://doi.org/10.5195/jyd.2017.497

Krishna, D.K., and N.V. Kumbhare. 2019. "Role of Social Sciences in Agricultural Development in India." *Rashtriya Krishi* 14(1): 101–104. http://researchjournal.co.in/online/RKE/RKE-14(1)/14_101-104.pdf

Krumboltz, J.D. 1979. "A Social Learning Theory of Career Decision Making." In Social Learning and Career Decision Making, edited by A.M. Mitchell, G.B. Jones, and J.D. Krumboltz, 19-50. Rhode Island: The Carroll Press.

Lent, R.W., S.D. Brown, and G. Hackett. 1994. "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance." *Journal of Vocational Behavior* 45(1): 79–122. https://doi.org/10.1006/jvbe.1994.1027

Luckey, A.N. 2012. "Assessing Youth Perceptions and Knowledge of Agriculture: The Impact of Participating in an AgVenture Program." Unpublished Master's Thesis, Texas: Graduate Studies of Texas A&M University, USA.

Lugtu, K.C. 2022. "For Young Filipinos, #Futureofwork is Farming." *The Manila Times,* 21 April 2022. Accessed 20 May 2022. https://www.manilatimes.net/2022/04/21/business/top-business/for-young-filipinos-futureofwork-is-farming/1840643

Lumen, L.D.P. 2020. "Factors Affecting Youth Involvement in Agriculture in Selected Areas of the Davao Region." Unpublished Research Report, University of the Philippines Open University.

Magagula, B., and C.Z. Tsvakirai. 2020. "Youth Perceptions of Agriculture: Influence of Cognitive Processes on Participation in Agripreneurship." *Development in Practice* 30(2): 234–243. https://doi.org/10.1080/09614524.2019.1670138

Manalo, J., IV, and E. van de Fliert. 2013. "Push and Pull Factors in Rural Filipino Youth's Outmigration from Agricultural Communities." *Asian Journal of Agriculture and Development* 10(2): 59–73.

Manila Times, The. 2013. "Aging Filipino Farmers to Affect Food Security." *Special Report*, 22 June 2013. Accessed on 30 August 2022. https://www.manilatimes.net/2013/06/22/special-report/headlines/aging-filipino-farmers-to-affect-food-security/12166

Mendoza, C.R.C.R. 2022. "Exploring The Youth's Engagement to Agriculture: A Basis for A Social Mobilization Campaign." A paper presented at the 2022 National Conference on Agricultural Science and Technology, 24–25 March 2022 via Zoom.

Mulema, J., I. Mugambi, M. Kansiime, et al. 2021. "Barriers and Opportunities for the Youth Engagement in Agribusiness: Empirical Evidence from Zambia and Vietnam." *Development in Practice* 31(5): 690–706. https://doi.org/10.1080/09614524.2021.1911949

Murcia, K., C. Pepper, and J. Williams. 2020. "Youth STEM Career Choices: What's Influencing Secondary Students' Decision Making." *Issues in Educational Research* 30(2): 593–611.

Muthoni, E. 2017. "Challenges and Opportunities for Youth Engaged in Agribusiness in Kenya." A project report submitted to the School of Business, United States International University, USA.

Mutinda, J., V. Chepngeno, and T. Mugendi, T. 2021. "Attitudinal Individualities Affecting Youth Participation in Agriculture: A Case of Seven Selected Counties in Kenya." *International Journal of Academic Research in Business and Social Sciences* 11(5): 227-243. DOI:10.6007/IJARBSS/v11-i5/9920

Njeru, L.K. 2017. "Youth in Agriculture: Perceptions and Challenges for Enhanced Participation in Kajiado North Sub-County, Kenya." *Greener Journal of Agricultural Sciences* 7(8): 203–209. DOI:10.15580/GJAS.2017.8.100117141

Nyamwange, J. 2016. "Influence of Student's Interest on Career Choice Among First Year University Students in Public and Private Universities in Kisii County, Kenya." *Journal of Education and Practice* 7(4): 96–102.

NYC (National Youth Commission). 1995. "Republic Act 8044: The Youth in Nation Building Act." Accessed on 15 November 2021. https://nyc.gov.ph/republic-act-8044/

Official Gazette, The. 2019. "Republic Act 11321: Sagip Saka Act." Accessed on 15 November 2021. https://www.officialgazette.gov.ph/downloads/2019/04apr/20190417-RA-11321-RRD.pdf

Okiror, J., and D. Otabong. 2015. "Factors Influencing Career Choice Among Undergraduate Students in an African University Context: The Case of Agriculture Students at Makerere University, Uganda." *Journal of Dynamics in Agricultural Research* 2(2): 12–20.

Omotesho, K.F., Olabanji O.P., D.A. Olabode, and I. Ogunlade. 2017. "Analysis of University Students' Perception on Agricultural Entrepreneurship Option Towards Tackling Unemployment Among Educated Youths." *Journal of Agricultural Faculty of Gaziosmanpasa University* 34(3): 172–181. DOI: 10.13002/jafag4324

Orbeta, A.C. Jr., and M.R. Abrigo. 2009. "Philippine International Labor Migration in the Past 30 Years: Trends and Prospects." *Discussion Paper Series* No. 2009–33. Manila: Philippine Institute for Development Studies (PIDS).

Palis, F.G. 2020. "Aging Filipino Rice Farmers and Their Aspirations for Their Children." *Philippine Journal of Science* 149(2): 351–361.

Pelzom, T., and O. Katel. 2017. "Youth Perception of Agriculture and Potential for Employment in the Context of Rural Development in Bhutan." *Development, Environment and Foresight* 3(2): 92–107.

PhilAtlas. 2023. "General Santos." Accessed on 17 December 2023. https://www.philatlas.com/mindanao/r12/general-santos.html

PSA (Philippine Statistics Authority). 2017. *2015 Census of Population*. Accessed on 17 December 2023. https://psa.gov.ph/statistics/population-and-housing/node/120080

———. 2020. *Agricultural Indicators System | Economic Growth: Agriculture*. Quezon City, Philippines: Philippine Statistics Authority. https://psa.gov.ph/system/files/main-publication/1_Full%2520Report%2520Economic%2520Growth%2520Agriculture%25202016-2020%2520as%2520of%252015%2520June_v2_signed.pdf

———. 2022. *Regional Value of Production in Agriculture and Fisheries: 2019-2021*. Quezon City: Philippine Statistics Authority. https://psa.gov.ph

Quismundo, T. 2012. "Enrollment in Agriculture at UPLB Sharply Declines." *Inquirer.net: Nation*, 4 July 2012. Accessed on 1 June 2022. https://newsinfo.inquirer.net/223047/enrollment-in-agriculture-at-uplb-sharplydeclines#ixzz6p5krroWF

Secretario, M.L.P. 2021. "Perception of Filipino Youth Towards Agriculture: Eradicating Agri Stereotypes through Education." A paper presented at the UNIV 2021 Asia Pacific Research Congress, 31 March 2021. DOI:10.13140/RG.2.2.27148.03209

Som, S., R.R. Burman, J.P. Sharma, R. Padaria, S. Paul, and A.K. Singh. 2018. "Attracting and Retaining Youth in Agriculture: Challenges and Prospects." *Journal of Community Mobilization and Sustainable Development* 13(3): 385–395.

Syeda, R., P.T. Lundgren, G. Kasza, et al. 2021. "Young People's Views on Food Hygiene and Food Safety: A Multicentre Qualitative Study." *Education Sciences* 11(6): 261–272. https://doi.org/10.3390/educsci11060261

Udemezue, J.C. 2019. "Agriculture for All; Constraints to Youth Participation in Africa." *Current Investigations in Agriculture and Current Research* 7(1): 904–908. DOI: 10.32474/CIACR.2019.07.000256

Vasava, H.M., V.S. Parmar, J.M. Charel, and C.K. Timbadia. 2015. "Relationship Between the Personal Characteristics and Attitude of Rice Growers Towards Hybrid Rice." *International Journal of Advanced Multidisciplinary Research* 2(10): 13–15.

Venkatesh, V., M.G. Morris, G.B. Davis, and F.D. Davis. 2003. "User Acceptance of Information Technology: Toward a Unified View." *MIS Quarterly* 27(3): 425–478. https://doi.org/10.2307/30036540

Vihari, M.A., M.S. Rao, T.G. Krishna, and M.M. Luther. 2020. "Relationship Between Profile Characteristics and Perception of Rural Youth Towards Agriculture as an Occupation." *Current Journal of Applied Science and Technology* 39(41): 40–46. https://doi.org/10.9734/cjast/2020/v39i4131118

Wade, S.E., and R.B. Adams. 1990. "Effects of Importance and Interest on Recall of Biographical Text." *Journal of Reading Behavior* 22(4): 331–353. https://doi.org/10.1080/10862969009547

World Bank, The. 2020a. "Agriculture, Forestry, and Fishing, Value Added (% of GDP) - Philippines." Accessed on 20 May 2022. https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?end=2020&locations=PH&start=1960&view=chart

———. 2020b. "Philippines: Vibrant Agriculture is Key to Faster Recovery and Poverty Reduction." *Press Release,* 9 September 2020. Accessed on 30 August 2022. https://www.worldbank.org/en/news/press-release/2020/09/09/philippines-vibrant-agriculture-is-key-to-faster-recovery-and-poverty-reduction

———. 2022. "Rural Population (% of Total Population) – Philippines." Accessed on 20 May 2022. https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS?locations=PH

Udemezue, J.C. 2019. "Agriculture for All; Constraints to Youth Participation in Africa." *Current Investigations in Agriculture and Current Research* 7(1): 904–908. DOI: 10.32474/CIACR.2019.07.000256

Zidana, R., F. Kaliati, and C. Shani. 2020. "Assessment of Youth Engagement in Agriculture and Agribusiness in Malawi: Perceptions and Hindrances." *Journal of Entrepreneurship and Management* 9(2): 19–28.