*Original Research Article*

Familiarity, Interest, and Attitudes Towards Non-Ruminant Animals Among Senior High School Students

.

ABSTRACT

|  |
| --- |
| Acknowledging the agricultural sector's economic significance and the challenges an aging farming population, the research aims to assess students' perspectives on non-ruminants, like poultry and swine, as a potential area for youth engagement and career development. Exploring how the students’ perspective towards non-ruminants gives us valuable clues about the long-term sustainability of our farming communities. The subjects of this study were the 201 senior high school students from Sagay National High School and Floro T. Bongco Farm School in Northern Negros, Philippines. Using a descriptive-quantitative design, data were collected through a survey which was conducted on May 7-10, 2024.  When taken as a whole, results showed that students are moderately familiar with non-ruminants. Specifically, among the various species of ruminant animals, students were highly familiar with swine and chicken. On the other hand, when taken as a whole, students have a high interest in hands-on activities and career opportunities within agriculture, and a positive attitude toward animal welfare and the sector's role in food security. Specifically, however, students were fairly interested in adopting and discovering innovations in raising non-ruminant animals, raising non-ruminants for self-sufficiency or consumption, gathering animal wastes, investing time, money, and effort for non-ruminant raising, attending seminars, and marketing. Finally, students generally consider non-ruminants as very important, and they should be provided with proper nutrition and ideal housing, monitored and protected from being subjected to research, and treated with the same level of compassion and respect.  These findings suggest that senior high school students were familiar with and interested in non-ruminant animal production. Their positive attitude towards this sector promises a potential for youth participation in agriculture and highlights the need for educational programs to foster this interest. These findings give inspiration for future enthusiasts of agriculture, specifically non-ruminant animal production.  varices grades. |

*Keywords: Non-ruminant, Senior High School, Animal Science, Attitude, Familiarity, and Interest*

1. INTRODUCTION

The Philippines is an agricultural country with a land area comprising about thirty million (30,000,000) hectares, of which forty-seven percent (47%) of this land area is suited to agriculture (Abe et al., 2020). Agriculture has long been the backbone of the Philippine economy (Patacsil et al., 2023). Also, agriculture is one of the primary sources of income in the Philippines, accounting for forty-to-forty-five percent (40–45%) of the country's total national income and seventy-five to eighty percent (75–80%) of Philippine total exports. In addition, about a quarter of employed Filipinos worked in the agricultural sector, which generated a gross value added (GVA) of about 1.78 trillion Philippine pesos, or 8.9% of the country's GDP (Statista, 2021).

Despite its historical and economic importance, the Philippine agricultural sector faces significant challenges, mainly due to an aging farming population, with Filipino farmers now averaging between fifty-three (53) and fifty-nine (59) years old (Mercado et al., 2023). This demographic trend raises concerns about the future of Philippine agriculture, with experts predicting a potential shortage of farmers in the next decade, thereby threatening the country's food security. One of the main factors contributing to the shortage of farmers is the lack of interest among young generations in agriculture (Consentino et al., 2023).

The younger generation, specifically senior high school students, stands at a crucial crossroads. Their perspectives toward fields like agriculture are critical and can determine their future career choices (Dublin et al., 2020). This perspective is significantly shaped by affective responses, including familiarity, interest, and attitude, which are crucial in influencing their decision-making (Kimiagari et al., 2021).

Familiarity encompasses the knowledge or awareness that supports career interests. Studies suggest that when young individuals gain exposure to a field through family, community, or education, they are more inclined to view it as a viable career choice (Reeves et al., 2021). Interest reflects a person's enthusiasm or curiosity and is a strong motivator in selecting and sustaining a career. Career development theories highlight that personal interest fuels exploration and fosters a commitment to dedicating time to learn and build skills within a chosen field. This engagement not only initiates career pursuit but also supports long-term professional growth and satisfaction. Attitude reflects a person's feelings, beliefs, or predispositions, shaping how the young generation perceives specific fields like agriculture regarding prestige, profitability, and personal fulfillment. When youth hold a positive view, they are more inclined to see it as a worthwhile career option (Soomro et al., 2021).

Senior high school marks a key transition as students choose among specialized tracks that will shape their educational and career paths. This stage offers a timely opportunity to gauge their perspectives toward agriculture, including their awareness and perception of non-ruminants as an accessible and promising agricultural production area that could address economic and sustainability needs. Non-ruminants, such as chickens and swine, are valued for their low resource requirements and potential in local markets, making them an ideal sector for young, aspiring agribusiness entrepreneurs.

The choice of career track will define the content of the subjects a student will take in grades eleven (11) and twelve (12). Students can choose among three tracks: academic, technical-vocational-livelihood, and Sports and Arts. The academic tracks include three strands: Business, Accountancy, Management (BAM), Humanities, Education, and Social Sciences (HESS), and Science, Technology, Engineering, and Mathematics (STEM) (Department of Education).

Senior high school students are part of the young generations in the Philippines that must be taken into consideration; their age gap and education are very crucial for the future at this time, these young ones are building their respective careers that will lead to the success and progress in this country especially for food security and economic stability. To determine the personal and environmental elements that could influence their views toward non-ruminant animals can be attained through reliable research. Therefore, this study aims to ascertain the composition of the labor force and the types of professions that will work in the agriculture sector in the future. It also intends to investigate the senior high school students' familiarity with, interest in, and attitude toward non-ruminant animals. Finally, it will evaluate and collect pertinent data that will be useful in the future for the development and modification of various policies, initiatives, programs, and projects that the government will carry out and non-governmental organizations will carry out to inspire the next generation to pursue agriculture as a means of ensuring food security in the future.

2. material and methods

Research Design

This investigation aimed to explore the familiarity, interest, and attitude towards non-ruminant animals among senior high school students of Sagay National High School and Floro T. Bongco Farm School; hence, the descriptive research and quantitative research design were utilized (Bloomfield et al., (2019). Singh, S. (2024) states that the descriptive method explains, analyses, and classifies something. It is a method that defines the nature of existing conditions or determines the relationship between variables. On the other hand, quantitative research is a design that retrieves relevant information from existing and potential participants or respondents using sampling methods, polls, questionnaires, etc., the result of which can be depicted as numbers.

Locale of the Study

This study was conducted at Sagay National High School located in Brgy. Poblacion 2, Sagay City, and Floro T. Bongco Farm School which is situated in Escalante City, Negros Occidental.

Respondents of the Study

The study's respondents were senior high school students at Sagay National High School and Floro F. Bongco Farm School. These respondents were categorized according to their grade level, track/ specialization, gender, and age. These profile variables of the students were included because these are significant factors in determining their familiarity, interest, and attitude toward non-ruminant animals (Vargas & Espiritu (2024).

Data Gathering Instrument

The main research instrument used in this study is the research-made survey that measures the extent of familiarity, interest, and attitude toward non-ruminant animals (Aithal et al., (2020). The instrument was fostered based on the valuable indicators in the literature, which experts validate. The instrument used was comprised of four main parts. Part 1 consists of the demographic profile of the respondents. Parts 2 to 4 consisted of ten-item questions that reflect and measure students' familiarity, interest, and attitude towards non-ruminant animals.

Collection of Data

The collection of data was performed by a questionnaire and distributed by the researcher with the aid of the teachers in senior high schools in different schools situated in the first and second districts of Negros Occidental, respectively Sagay National High School in Sagay City and Floro F. Bongco Farm School in Escalante City. The survey questionnaire was distributed to senior high school learners in grades 11 and 12. Since most respondents are minors, researchers have attempted to secure informed consent and assent.

Data Analysis Procedure

To answer the problems postulated in this study, the researchers employed the following descriptive and inferential statistics:

Problem one (1) determines the profile of the senior high school students of Sagay National High School and Floro F. Bongco Farm School, thus frequency and percentage distribution were utilized (Dhiman et al., (2022).

For problems two (2), three (3), and four (4), which determine the extent of familiarity, interest, and attitude of senior high school students towards non-ruminant animals, mean and standard deviation were used (McGrath et al., 2020). The extent of familiarity, interest, and attitude of senior high school students is described using the following scales and interpretations (Robinson, J. (2024) ;

**Table 1.** Scales and interpretation

|  |  |
| --- | --- |
| Scale | Interpretations |
| 1.00 - 1.80 | Not familiar at All/ Not Interested at All/ Not Important at All |
| 1.81 - 2.60 | Slightly Familiar/ Slightly /Interested/ Slightly Important |
| 2.61 - 3.40 | Fairly Familiar/ Fairly Interested/ Fairly Important |
| 3.41 - 4.20 | Very Familiar/ Very Interested/ Very Important |
| 4.21 - 5.00 | Highly Familiar/ Extremely/Interested/ Extremely Important |

3. results and discussion

Table 2 shows the profile of the respondents. Of the 201 respondents, 114 or 57% of the student participants are Grade 11 students, while 87 or 43% of the respondents are Grade 12 students. When grouped according to their track or specialization, 88 or 44% are STEM students, 76 or 38% are HUMMS students, and 37 or 18% of the respondents are GAS students. When grouped based on their sexuality, 83 or 41% of the respondents are male, and 118 or 59% are female. On the other hand, categorized according to their age, 192 or 96% of the respondents are ages 16-20 years old, 6 or 3 % are ages 21-25, and 3 or 1 % are ages 30 years old and above.

These profile variables are expected to influence the students' familiarity, interest, and attitudes towards non-ruminant animals. Studies have shown that age, gender, and educational level can significantly impact individuals' perceptions and attitudes towards various subjects, including animals (Pereira et al., 2023). Research by Alba et al. (2023) found that a more positive outlook towards animals can be seen from individuals with younger ages than older individuals. Similarly, studies by Prato-Previde et al. (2022) highlighted the role of gender in shaping attitudes towards animals, with females generally exhibiting greater empathy and concern for animal welfare. Moreover, educational background and specialization have been linked to differences in attitudes toward specific fields, as Alston et al. (2020) demonstrated in their examination of STEM versus non-STEM students' perceptions of animal-related issues. Understanding how these demographic variables intersect with attitudes towards non-ruminant animals can provide valuable insights for educational programs and outreach efforts to promote animal welfare and conservation initiatives among young adults (Scarborough et al., 2021).

|  |  |  |  |
| --- | --- | --- | --- |
| **Table 2. Demographic Profile of the Respondents** | | | |
|  | | | |
| **Profile** |  | **Frequency** | **Percentage** |
| Year level |  |  |  |
|  | Grade 11 | 114 | 57% |
|  | Grade 12 | 87 | 43% |
| *Total* |  | 201 | 100% |
| *Track* |  |  |  |
|  | STEM | 88 | 44% |
|  |  |  |  |
|  | TVL (AFA) |  |  |
|  | HUMMS | 76 | 38% |
|  | GAS | 37 | 18% |
|  | ABM |  |  |
|  | TECHVOC |  |  |
|  | Others |  |  |
| ***Total*** |  | **201** | **100%** |
| *Age* |  |  |  |
|  | 16-20 | 192 | 96% |
|  | 21-25 | 6 | 3% |
|  | 30 years old and above | 3 | 1% |
| ***Total*** |  | **201** | **100%** |

Table 3 reflects the familiarity of non-ruminant animals among senior high school students. Students were highly familiar with the swine, with a calculated mean of 4.3 at a standard deviation of 1.08, and chicken, with a mean of 4.41 at a standard deviation of 0.96. Students were familiar with pigeons with a mean of 3.71 at a standard deviation of 1.4, and animal wastes as soil conditioner/ fertilizer with a mean of 3.61 at 1.33. On the other hand, students were slightly familiar with guinea fowl, with a mean of 2.52 at a standard deviation of 1.33, and common diseases of non-ruminant animals, with a 2.61 mean at a standard deviation of 1.2. More students were reasonably familiar with the kind of domesticated non-ruminant animals, with a mean of 2.86 at a standard deviation of 1.34, feeds of non-ruminant animals with 2.76 mean at a standard deviation of 1.34, economic importance of non-ruminant animals with 3.13 mean at standard deviation of 1.27, and some poultry management with a mean of 3.32 at SD of 1.33.

Generally, results presented in this table revealed that senior high school students were fairly familiar with non-ruminant animals. This implies that the students should have seen the opportunities that are associated with non-ruminant animals. Based on the results of the studies by Mercado et al. (2023), high school students generally lacked knowledge in terms of agricultural concepts. This was further agreed upon by the results of Barrutia et al. (2022), who explored students' familiarity with specific animal species and their economic importance, revealing gaps in understanding among high school students. Moreover, studies by Njura et al. (2020) have examined the effectiveness of educational interventions in enhancing students' knowledge and awareness of agricultural topics, suggesting the potential for targeted educational programs to improve familiarity with non-ruminant animals among high school students. Understanding students' current levels of familiarity with non-ruminant animals is crucial for designing educational strategies to promote agricultural literacy and harness the potential of non-ruminant animals in sustainable agriculture.

**Table 3.** **Extent of Familiarity towards Non-ruminants Animals among Senior High School Students**

|  |  |  |  |
| --- | --- | --- | --- |
| **Familiarity with Non-ruminant Animals** | **Mean** | **SD** | **Interpretations** |
| 1. Swine/ Pig | 4.3 | 1.08 | Highly Familiar |
| 2. Chicken | 4.41 | 0.96 | Highly Familiar |
| 3. Pigeons | 3.71 | 1.4 | Very Familiar |
| 4. Guinea fowl | 2.52 | 1.33 | Slightly Familiar |
| 5. Kind of domesticated non-ruminant animals. | 2.86 | 1.34 | Fairly Familiar |
| 6. Feeds of non-ruminant animals. | 2.76 | 1.34 | Fairly Familiar |
| 7. Common diseases of non-ruminant animals. | 2.61 | 1.2 | Slightly Familiar |
| 8. Animal wastes as soil conditioner/ fertilizer. | 3.61 | 1.33 | Very Familiar |
| 9. Economic importance of non-ruminant animals. | 3.13 | 1.27 | Slightly Familiar |
| 10. Some poultry management. | 3.32 | 1.33 | Fairly Familiar |
| As a whole | 3.32 | 1.26 | Fairly Familiar |

Table 4 presents the extent of interest in non-ruminant animals among senior high school students. It displayed that students are very interested in the hands-on learning activities with a mean of 3.97 at standard deviation of 0.99, diverse career opportunities in agriculture and animal science with 3.65 mean at standard deviation of 1.09, feeding the animals with a mean of 4.1 at standard deviation of 1.03, and learning about the specialized care and nutritional requirements of non-ruminant animals with a computed mean of 3.65 at standard deviation of 1.17.

On the other hand, students were fairly interested in adopting and discovering innovations in raising non-ruminant animals, with a mean of 3.33 at a standard deviation of 1.13, raising non-ruminant animals for self-sufficiency or consumption with a mean of 3.07 at a standard deviation of 1.26, gathering animal wastes with a mean of 2.91 at standard deviation of 1.26, and investing time, effort, and money in raising non-ruminant animals with a computed mean of 3.34 at standard deviation of 1.23.

Research by Knobloch and Smith (2024). explored high school students' interest in hands-on learning activities related to agriculture and animal science, highlighting the importance of experiential learning in fostering student engagement. Additionally, studies by Yusuf et al. (2024) have investigated students' interest in diverse career opportunities within agriculture, emphasizing the need for educational programs to promote awareness of the range of professions available in the field. Furthermore, research by Zenenga et al. (2023) examined students' interest in specific aspects of animal care and management, such as feeding practices and nutritional requirements, suggesting the potential for targeted educational interventions to enhance students' knowledge and engagement in these areas. Similarly, studies by Kashyap et al. (2023) have explored students' interest in adopting innovative practices in animal husbandry, highlighting the role of curiosity and exploration in driving agricultural innovation (Kashyap et al., 2023).

Understanding students' levels of interest in non-ruminant animals is crucial for developing educational strategies that effectively engage and motivate students in agricultural and animal science studies (Sutarto et al., 2020). By identifying areas of high interest and addressing knowledge gaps in less familiar topics, educators can better tailor their curriculum to meet students' needs and interests, ultimately fostering a greater appreciation for non-ruminant animals and sustainable agriculture practices.

|  |  |  |  |
| --- | --- | --- | --- |
| **Table 4. Extent of Interest towards Non-ruminants Animals among Senior High School Students** | | | |
| **Interest in Non-ruminant Animals** | **Mean** | **SD** | **Interpretations** |
| 1. Hands-on learning activities. | 3.97 | 0.99 | Very Interested |
| 2. Diverse career opportunities in agriculture and animal science. | 3.65 | 1.09 | Very Interested |
| 3. Adopting and discovering innovations in raising non-ruminant animals. | 3.33 | 1.13 | Fairly Interested |
| 4. Raising non-ruminant animals for self-sufficiency or consumption. | 3.07 | 1.26 | Fairly Interested |
| 5. Gathering animal wastes. | 2.91 | 1.26 | Fairly Interested |
| 6. Feeding the animals. | 4.1 | 1.03 | Very Interested |
| 7. Investing time, effort, and money in raising non-ruminant animals. | 3.34 | 1.23 | Fairly Interested |
| 8. Attending seminars regarding animal production. | 3.13 | 1.22 | Fairly Interested |
| 9. Marketing non-ruminant animal products. | 2.94 | 1.25 | Fairly Interested |
| 10. Learning about the specialized care and nutrition requirements of non-ruminant animals. | 3.65 | 1.17 | Very Interested |
| As a whole | 3.409 | 1.163 | Very Interested |

4. Conclusion

WHEREFORE, based on the foregoing facts, the following conclusions were advanced in this study:

1. Senior high school students were reasonably familiar with non-ruminant animal production;

2. Senior high school students showed a promising interest in non-ruminant production;

3. The positive attitude of the senior high school students towards non-ruminant animals was very evident; and

4. There is a bright future in the agriculture industry's labor force, particularly in animal production figures.

Competing interests

Authors have declared that no competing interests exist.

References

Abe, J. A. P. A. (2020). The future of big data analysis for the Philippine's rice industry using the integration of mind mapping and future wheel in scenario building. University of Philippines, Diliman.

Aithal, A., & Aithal, P. S. (2020). Development and validation of survey questionnaire & experimental data–a systematical review-based statistical approach. International Journal of Management, Technology, and Social Sciences (IJMTS), 5(2), 233-251.

Alba, A. C., Ferrie, G. M., Schook, M. W., Leahy, M., & Cronin, K. A. (2023). Gender and age, but not visual context, impact wildlife attitudes and perceptions of animals in zoos. Journal of Zoological and Botanical Gardens, 4(1), 118-13 3.

Alston, A. J., Roberts, R., & English, C. W. (2020). Toward a holistic agricultural student recruitment model: A national analysis of the factors affecting students' decision to pursue an agricultural related degree. Journal of Research in Technical Careers, 4(1), 1.

Barrutia, O., Ruiz-González, A., Sanz-Azkue, I., & Díez, J. R. (2022). Secondary school students' familiarity with animals and plants: hometown size matters. Environmental Education Research, 28(10), 1564-1583.

Bloomfield, J., & Fisher, M. J. (2019). Quantitative research design. Journal of the Australasian Rehabilitation Nurses Association, 22(2), 27-30.

Consentino, F., Vindigni, G., Spina, D., Monaco, C., & Peri, I. (2023). An agricultural career through the lens of young people. Sustainability, 15(14), 11148.

Department of Education. List of senior high schools. Department of Education. https://www.deped.gov.ph/k-to-12/senior-high-school/list-of-senior-high-schools/

Dhiman, D. B. (2022). Use and impact of social media on academic performance of Kurukshetra University students: A case study. Available at SSRN 4212827.

Dublin, B. C., Logrosa, A. A., Sosing, M. R. D., & Cornillez Jr, E. E. C. (2020). Factors influencing career preference of junior high school students for senior high school study. Journal of Educational Research and Technology Management Article History, 1(1), 29-38.

Faner, J. M. V., Dalangin, E. A. R., De Leon, L. A. T. C., Francisco, L. D., Sahagun, Y. O., & Acoba, E. F. (2024). Pet attachment and prosocial attitude toward humans: the mediating role of empathy to animals. Frontiers in Psychology, 15, 1391606.

Kashyap, N., Rathi, A., Pandarinathan, S., Anand, R., & Panigrahi, C. K. (2023). MODERN CONCEPTS IN AGRICULTURE (VOLUME-5).

Kimiagari, S., & Malafe, N. S. A. (2021). The role of cognitive and affective responses in the relationship between internal and external stimuli on online impulse buying behavior. Journal of Retailing and Consumer Services, 61, 102567.

Knobloch, N., & Smith, M. (2024). Experiential learning in school-based agricultural education (pp. 98– 121). IGI Global. https://doi.org/10.4018/979-8-3693-2766-1.ch006

Loyd, D. D., King, E. G., & Thompson, J. J. (2021). Goats in schools: Parental attitudes and perceived benefits. Anthrozoös, 34(1), 139-155.

McGrath, S., Zhao, X., Steele, R., Thombs, B. D., Benedetti, A., & DEPRESsion Screening Data (DEPRESSD) Collaboration. (2020). Estimating the sample mean and standard deviation from commonly reported quantiles in meta-analysis. Statistical methods in medical research, 29(9), 2520-2537.

Mercado, K. M. P., & Osbahr, H. (2023). Feeding the Future: Knowledge and Perceptions of the Filipino Youth Toward Agriculture. Asian Journal of Agriculture and Development, 20(2), 31-50.

Njura, H. J., Kubai, K. I., Taaliu, S. T., & Shem Khakame, K. (2020). The relationship between agricultural teaching approaches and food security in Kenya. Education Research International, 2020(1), 8847864.

Patacsil, F. F., Parrone, J. M., Brosas, M. B., & Roaring, B. F. (2023). Analysis of Concerns of the Agricultural Sector in the Philippines using Associative Rule. International Journal, 10(3), 3316-3324.

Pereira, H. M., Braga-Pereira, F., Azeredo, L. M. M., Lopez, L. C. S., & Alves, R. R. N. (2023). Assessing factors influencing students' perceptions towards animal species conservation. PeerJ, 11, e14553.

Prato-Previde, E., Basso Ricci, E., & Colombo, E. S. (2022). The complexity of the human–animal bond: Empathy, attachment and anthropomorphism in human–animal relationships and animal hoarding. Animals, 12(20), 2835.

Reeves, L. M., Parrish, C. W., & Guffey, S. K. (2021). Choosing a career in special education. Journal of Research in Special Educational Needs, 21(2), 73-85.

Robinson, J. (2024). Likert scale. In Encyclopedia of quality of life and well-being research (pp. 3917- 3918). Cham: Springer International Publishing.

Scarborough, W. J., Pepin, J. R., Lambouths III, D. L., Kwon, R., & Monasterio, R. (2021). The intersection of racial and gender attitudes, 1977 through 2018. American Sociological Review, 86(5), 823-855.

Singh, S. (2024). What is Descriptive Research? Definition, Methods, Types and Examples. Researcher. life blog.(November, 2023) https://Researcher. life blogarticle/what-is-descriptive-research-definition-methods-types-and-examples.

Soomro, B. A., Memon, M., & Shah, N. (2021). Attitudes towards entrepreneurship among the students of Thailand: an entrepreneurial attitude orientation approach. Education+ Training, 63(2), 239-255.

Sutarto, S., Sari, D. P., & Fathurrochman, I. (2020). Teacher strategies in online learning to increase students' interest in learning during COVID-19 pandemic. Jurnal Konseling dan Pendidikan (JKP), 8(3), 129-137.

Vargas, J., & Espiritu, D. (2024). Factors Affecting High School Track Preferences of Grade 10 Students in Libmanan District, Division of Camarines Sur: A Basis for Career Guidance Plan. Psychology and Education: A Multidisciplinary Journal, 26(2), 132-140.

Yusuf, J. F., & Egunsola, A. O. E. (2024). Assessing instructional strategies in agricultural science to enhance senior secondary school students' interest in agriculture in Zaria Educational Zone. Science World Journal, 19(1), 1-8.

Zenenga, A., Phillips, J., Nyashanu, M., & Ekpenyong, M. S. (2023). Exploring the Impact of Animal Involvement in the Learning Experiences of Learners Mainly With Autism in the English West Midlands Region: A Qualitative Study. Journal of Education, 203(1), 10-17.