

Strengths, Weaknesses, Opportunities and Threats (SWOT) of Egg Poultry Farming in Peñaranda, Nueva Ecija

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Abstract— Poultry farming plays a vital role in Philippine agriculture, contributing significantly to food security and economic development. This study focused on the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of egg poultry farming in Peñaranda, Nueva Ecija, a key agricultural municipality recognized for its egg production. Using a quantitative descriptive-correlational research design, data were gathered from ten poultry farm owners through surveys and interviews, supported by statistical tools such as weighted mean and Pearson R correlation. Findings revealed that egg production levels vary weekly, with most farms operating seven days a week. Strengths included low disease incidents and effective vaccination, while weaknesses centered on poor biosecurity and seasonal profit fluctuations. Opportunities were seen in increasing consumer demand and access to quality raw materials, whereas threats included unfavorable temperatures, high input costs, and market competition. Results indicated low to very low correlations between business technical aspects and SWOT factors, underscoring the need for improved management practices. The study recommends proper waste management, investment in modern facilities, employee training, and strategic market positioning to enhance sustainability and competitiveness.

Keywords— Egg Poultry Farming, SWOT Analysis, Agriculture, Food Security, Poultry Management.

I. INTRODUCTION

Poultry farming, an essential branch of agriculture, involves raising chickens, ducks, turkeys, and pigeons primarily for meat and egg production. Among these, chicken remains the most cultivated due to its consistently high global demand. The sector plays a critical role in ensuring food and nutritional security, particularly in developing countries, by providing an accessible and reliable source of protein (Vaarst et al., 2015).

In the Philippines, poultry farming is a cornerstone of agricultural development and a vital contributor to both the economy and food security. The industry has expanded rapidly in response to population growth and increasing demand for protein-rich diets, positioning the country as one of Southeast Asia's leading poultry producers. Nueva Ecija, traditionally recognized as the "Rice Granary of the Philippines," has also emerged as a hub for poultry farming. Favorable climatic conditions, strong market access, and the proactive engagement of local farmers have driven the province's poultry sector forward.

Within this context, the municipality of Peñaranda has become a significant player in egg poultry production. Its case offers a valuable lens through which to examine the interplay of tradition and modern innovation in agriculture. This research focuses on the dynamics of egg poultry farming in Peñaranda, highlighting its challenges, adaptive strategies, and sustainable practices that contribute to the resilience of the local poultry industry. Despite economic benefits, poultry farming in Nueva Ecija and Peñaranda faces challenges such as disease outbreaks, environmental issues, and need for sustainable practices, all threatening industry growth and farmers' livelihoods. Addressing these concerns is essential for the long-term sustainability of the sector.

This study thoroughly investigates these issues, aiming to provide practical insights for farmers, policymakers, and industry stakeholders through a SWOT analysis. By examining the strengths, weaknesses, opportunities, and threats, the research seeks to support the sustainable growth and resilience of egg poultry farming in Peñaranda's agricultural landscape. The SWOT framework—strengths, weaknesses, opportunities, and threats—is a strategic tool used to evaluate organizational competitiveness, though its origins remain debated (Teoli et al., 2022). In Malaysia's Halal logistics sector, SWOT analysis has been applied to assess industry conditions, highlighting ways to maximize strengths and opportunities while addressing weaknesses and threats (Talib & Hamid, 2014).

Statement of the Problem

1. How may the business of the respondents be described in terms of:
 - a. number of eggs produced per week; and
 - b. number of days operating
2. How may the business operation of the respondents be assessed using SWOT Analysis in terms of:
 - a. strength;
 - b. weaknesses;
 - c. opportunities; and
 - d. threats
3. What are the common problems encountered by the egg poultry farming in Peñaranda, Nueva Ecija in terms of:
 - a. strength;
 - b. weaknesses;
 - c. opportunities; and
 - d. threats
4. Is there a significant relationship between the business-technical aspect of the respondent and the SWOT Analysis of the researcher?
5. What SWOT Matrix can be proposed for egg poultry farming in Peñaranda, Nueva Ecija?

II. MATERIALS AND METHODS

This study employed a quantitative descriptive-correlational research design to examine the relationship between SWOT factors and egg poultry farm performance. The research was conducted in Peñaranda, Nueva Ecija, Philippines, involving ten poultry farm owners selected for their expertise and direct involvement in egg

production. From a total of 58 registered poultry farms in the municipality, the sample was drawn using a comprehensive list provided by the local government.

Data collection was carried out through face-to-face interviews and a structured survey questionnaire. The instrument consisted of three parts: Part I covered the technical business profile of the respondents; Part II assessed business operations using SWOT anal on a modified 4-point Likert scale (4 – Strongly Agree, 3 – Agree, 2 – Disagree, 1 – Strongly Disagree); and Part III included open-ended questions to identify problems encountered in terms of Strengths, Weaknesses, Opportunities, and Threats. The questionnaire was adapted and modified from Vega and Balaria's (2019) SWOT evaluation of MM Anupol Poultry Farm.

Prior to full deployment, the instrument underwent expert validation, pilot testing, and statistical reliability checks. The overall validity score was 4.02, interpreted as "Very Good." Reliability coefficients for each SWOT variable were as follows: Strengths (0.7675), Weaknesses (0.7071), Opportunities (0.8321), and Threats (0.8686), indicating strong internal consistency and suitability for measuring the intended outcomes.

III. RESULTS AND DISCUSSION

1. Description of the Business Technical Aspect

1.1. Description of Business Technical Aspect in terms of number of eggs produce per week

Table 1. Respondents of the Study

Respondents	Population
San Josef	2
Las Piñas	2
Sinasajan	2
San Mariano	1
Callos	3
Total	10

Table 1 Shows the distribution of the respondents in Peñaranda Nueva Ecija.

Table 2. Scale of Information

Scale	Mean Range	Interpretation	Descriptive
4	3.36-4.00	Strongly Agree	Highly Practiced
3	2.51-3.25	Agree	Practiced
2	1.76-2.50	Disagree	Not Practiced
1	1.00-1.75	Strongly Disagree	Highly Not Practiced

Table 2 present the scales applied by the researcher in the interpretation and description of data under the Strength, Weaknesses, Opportunities, and Threats of Egg Poultry Farm.

Table 3. Business technical aspects of the respondents in terms of Eggs Produce per week

Number of Eggs Produce per week	Frequency	Percentage
155,200	1	10%
48,000	1	10%
45,800	1	10%
50,000	1	10%
86,500	1	10%
37,200	1	10%
35,000	1	10%
76,500	1	10%
42,600	1	10%
TOTAL	10	100%

The table shows the percentage of Business Technical Aspect of the respondents in terms of Eggs produced per week. Based on the findings above, the highest number of eggs produced per week is 155,200 and the lowest is 35,000, while the others have 48,000, 45,800, 50,000, 86,500, 37,200, 76,500 and 42,600.

Each farm has the same frequency from the others. Weather conditions are one of the biggest factors that affect egg production, which results in inconsistency.

1.2 Number of Days Operating

Table 4. Business Technical Aspects of the respondents in terms of Number of Days Operating

Number of Days Operating	Frequency	Percentage
5-6 days	2	20%
7 days	8	80%
Total	10	100%

Table 4 displays the frequency and percentage of the responses of the respondents in terms of Number of Days Operating, almost all of the poultry farms operates 7 days per week with a frequency of 8 (80%) while there is only two egg poultry farm that is operating 5-6 days a week with a frequency of 2 (20%).

According to (E. Smith, 2022) Daily business operations in companies involve essential tasks that generate revenue and raise the company's value. Enhancing a company's value and profitability through sales, marketing, and customer service is the main goal of daily business operations.

2. Assessment of the Business Operations using SWOT Analysis

2.1 Assessment of Business Operations using SWOT Analysis in terms of Strength

Table 5. Assessment of Business Operations using SWOT Analysis in terms of Strength

Statement	Mean	Interpretation	Description	Rank
1. Low disease incident encountered	3.4	Strongly Agree	Highly Practiced	5
2. Well supplemented vaccines and medicines	3.7	Strongly Agree	Highly Practiced	3
3. Proper little management	3.5	Strongly Agree	Highly Practiced	6.5
4. Little noise in the location	3.6	Strongly Agree	Highly Practiced	1.5
5. High degree of specialization in poultry farm management	3.3	Strongly Agree	Highly Practiced	6.5
6. Low environmental pollution	3.7	Strongly Agree	Highly Practiced	1.5
7. Huge numbers of distribution in town	3.3	Strongly Agree	Highly Practiced	6.5
Average Weighted Mean	3.5	Strongly Agree	Highly Practiced	

Table 5 shows the assessment of business operations using SWOT analysis in terms of strengths, with an overall weighted mean of 3.5, verbally interpreted as Strongly Agree and described as Highly Practiced. The highest-rated strengths were well-supplemented vaccines and medicines, along with low environmental pollution (mean = 3.7), while the lowest was the presence of many distributors in town (mean = 3.3). Strengths were found to positively influence consumer behavior and community welfare. Effective management was also highlighted as vital in ensuring the success and sustainability of poultry farming operation.

2.2 Assessment of Business Operations using SWOT Analysis in terms of Weaknesses

Table 6. Assessment Business Operations using SWOT Analysis in terms of Weaknesses

Statement	Mean	Interpretation	Description	Rank
1. Minimal control of the biosecurity system	3.1	Agree	Practiced	2
2. Break-even profit during the summer season	3.5	Strongly Agree	Highly Practiced	1
3. Lack of high-technology poultry system	2.4	Disagree	Not Practiced	3
4. Low level of egg shelf life	2.1	Disagree	Not Practiced	4
5. Location site near residential area	1.6	Strongly Disagree	Highly Not Practiced	5
Average Weighted Mean	2.5	Disagree	Not Practiced	

Table 6 presents the result of the assessment of the business operation of the respondent using SWOT Analysis in terms of weaknesses, with the weighted mean of 2.5 (Disagree) and described as Not Practiced. Break-even profit during the summer season has the highest mean with a mean of 3.5 (strongly agree), while location near residential areas has the lowest mean of 1.6 (strongly disagree).

Rising temperatures may lead to reduced fertility and hatchability, affecting the overall health and reproductive performance of chickens. Extreme heat can also impact the expression of genes related to growth, feed efficiency, and resistance to diseases (A. Bhojar, I. Anghelescu, 2023) .

2.3 Assessment of Business Operations using SWOT Analysis in terms of Opportunities

Table 7. Assessment of Business Operations using SWOT Analysis in terms of Opportunities

Statement	Mean	Interpretation	Description	Rank
1. Increasing consumer demand and consciousness in the product	3.5	Strongly Agree	Highly Practiced	4
2. Creating strong functional relations between the owner and the stakeholders	3.6	Strongly Agree	Highly Practiced	2
3. Having availability of good quality raw materials	3.6	Strongly Agree	Highly Practiced	2
4. Having availability of high technology farm facilities	3.6	Strongly Agree	Highly Practiced	2
5. Operating in in a duopoly market structure	2.4	Disagree	Not Practiced	5
Average Weighted Mean	3.3	Strongly Agree	Highly Practiced	

Table 7 presents the result of the assessment of the business operation of the respondent using SWOT Analysis in terms of opportunities, rated highly (mean: 3.3, strongly agree), with the strongest factors being stakeholder relationships, access to quality raw materials, and advanced farm technology (mean: 3.6).

Operating in a duopoly market was least practiced (mean: 2.4, disagree). Quality inputs and modern facilities are vital for flock health, productivity, and product safety. Strong stakeholder ties enhance brand reputation, market adaptability, and long-term resilience. As noted by Ducker (2023), effective communication provides farmers with critical data for decision-making. Islam & Haque (2016) emphasize that only quality raw materials yield quality feed.

2.4 Assessment of Business Operations using SWOT Analysis in terms of Threats

Table 8. Assessment of Business Operations using SWOT Analysis in terms of Threats

Statement	Mean	Interpretation	Description	Rank
1. Not favorable temperature	3.6	Strongly Agree	Highly Practiced	1
2. Potential entry of new competitors	3.2	Strongly Agree	Highly Practiced	3
3. High cost of inputs	3.2	Strongly Agree	Highly Practiced	2
4. Always experiencing disease outbreaks	2.5	Agree	Practiced	4
5. Bad media exposure on bird flu issues	2.3	Disagree	Not Practiced	5
Average Weighted Mean	3.02	Agree	Practiced	

Table 8 presents the result of the assessment of the business operation of the respondent using SWOT Analysis in terms of threats. Threats were rated as practiced (mean: 3.02, agree), with unfavorable temperature as the top concern (mean: 3.6) and bird flu media exposure as least concerning (mean: 2.3, strongly disagree).

Poor ventilation, extreme heat, and low air quality increase poultry health risks and mortality. Respondents noted that high humidity and heat stress severely affect growth, egg production, and product quality (Amit, 2023).

3. Common Problems Encountered of the Respondents in terms of Strength, Weaknesses, Opportunities, and Threats

3.1 Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Strength

Table 9. Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Strength

Problems encountered in terms of Strength	Frequency	Percentage
Unexpected disease outbreak	2	40%
Noise barrier in the location	1	20%
High disease incident	1	20%
Lack of degree of specialization	1	20%
Total	5	100%

Table 9 presents the result of the common problems encountered of the respondents using the SWOT analysis in terms of strength, showing that 40% of respondents identified unexpected disease outbreaks as a major issue in egg poultry farming, while 20% cited noise barriers, frequent disease incidents, and lack of specialization. Contagious diseases spread rapidly through airborne pathogens, contaminated water, and shared equipment. Poor management of poultry security and hygiene increases outbreak risks, affecting animal welfare and food safety.

3.2 Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Weaknesses

Table 10. Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Weaknesses

Problems encountered in terms of Weaknesses	Frequency	Percentage
Minimal control of biosecurity	5	50%
Break even profit during summer	4	40%
Lack of high technology poultry system	1	10%
Total	10	100%

Table 10 presents the result of the common problems encountered of the respondents using the SWOT analysis in terms of weaknesses. Based on the results, it shows that 50% of respondents identified poor biosecurity as a major issue in egg poultry farming, while only 10% cited lack of advanced technology.

Half of the farms in Penaranda, Nueva Ecija lack proper biosecurity measures, increasing disease risks. Sáenz (2020) notes that inadequate biosecurity contributes to outbreaks of infectious diseases like Avian cholera, Newcastle disease, and Avian Influenza.

3.3 Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Opportunities

Table 11. Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Opportunities

Problems encountered in terms of Opportunities	Frequency	Percentage
Multiple competitors in the market	8	80%
Not having good quality of raw materials	1	10%
Lack of high technology farm facilities	1	10%
Total	10	100%

Table 11 presents the result of the common problems encountered of the respondents using the SWOT analysis in terms of opportunities. It shows that 80% of respondents see market competition as a major challenge in egg poultry farming, while only 10% cited poor raw materials and lack of technology. A saturated market leads to price fluctuations and reduced profit margins. Rubin (2019) notes that while competition makes differentiation harder, growing demand offers room for innovation in products and marketing.

3.4 Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Threats

Table 12. Common Problems Encountered of the Respondents using the SWOT Analysis in terms of Threats

Problems encountered in terms of Threats	Frequency	Percentage
Potential entry of competitors	5	50%
High cost input such as raw materials and medicine	4	40%
Not favorable temperature	1	10%
Total	10	100%

Table 12 presents the result of the common problems encountered of the respondents using the SWOT analysis in terms of threats. Findings reveal that 50% of respondents view the entry of new competitors as a key challenge in egg poultry farming, while only 10% cited unfavorable temperature. New players offering better or cheaper products can disrupt pricing and shift customer loyalty. Respondents expressed concern over losing market share. Kompyte (2023) highlights that unless businesses respond quickly, new or upgraded competitor offerings can erode customer base and impact profitability.

4. Correlation Between Business Technical Aspect and the Strengths, Weaknesses, Opportunities and Threats

Table 13. Significant correlation between technical aspect and SWOT Analysis in terms of Strengths

Pearson R Correlation (Strengths)	R-value	Interpretation
Number of eggs produced per week	0.3213	Low Positive Correlation
Number of days operating	0.2182	Very Low Positive Correlation

Table 13 shows the correlation between business technical aspects and SWOT strengths. Weekly egg production and strengths produced an R value of 0.3213, indicating a low positive relationship, where improved management practices such as feed and environmental control were linked to slightly higher productivity (Alltech, 2018). Operating days and strengths yielded an even weaker positive correlation ($R = 0.2182$), with farms operating seven days a week reporting modest gains in productivity due to consistent maintenance and security. Similar findings suggest that flexible schedules can enhance efficiency and output (Forbes, 2022).

Table 14. Significant correlation between technical aspect and SWOT Analysis in terms of Weaknesses

Pearson R Correlation (Weaknesses)	R-value	Interpretation
Number of eggs produced per week	-0.1534	Very Low Negative Correlation
Number of days operating	-0.1751	Very Low Negative Correlation

Table 14 presents the result of the correlation between the business technical aspect and the SWOT Analysis of the researchers in terms of weaknesses. The correlation between weekly egg production and weaknesses showed a very low negative relationship ($R = -0.1534$), indicating that poor management slightly reduces output. Respondents noted that mismanagement affects bird health, farm productivity, and sustainability.

Medina et al. (2020) emphasized that improper waste disposal leads to soil pollution, harming poultry. Similarly, the correlation between operating days and weaknesses was also very low and negative ($R = -0.1751$), suggesting that weak practices reduce operational efficiency. Operating fewer than 7 days hampers biosecurity and disease monitoring. Pulpstream (2021) adds that poor working conditions lower productivity and may violate labor regulations.

Table 15. Significant correlation between technical aspect and SWOT Analysis in terms of Opportunities

Pearson R Correlation (Opportunities)	R-value	Interpretation
Number of eggs produced per week	0.4395	Low Positive Correlation
Number of days operating	0.1263	Very Low Positive Correlation

Table 15 shows the correlation between the business technical aspect and SWOT opportunities. Weekly egg production had a low positive relationship with opportunities ($R = 0.4395$), indicating that better access to opportunities slightly improves output. Respondents noted that nutrition, housing, and equipment upgrades enhance productivity, supported by Sáenz (2023), who emphasized the role of hygienic feeding systems in reducing risks and improving efficiency.

Meanwhile, operating days showed a very low correlation with opportunities ($R = 0.1263$), suggesting only a slight link between longer operations and opportunity engagement. Respondents highlighted the need for market exploration and stakeholder networking, aligning with Deka Insight (2023), which stressed that research and outreach foster long-term business growth.

Table 16. Significant correlation between technical aspect and SWOT Analysis in terms of Threats

Pearson R Correlation (Threats)	R-value	Interpretation
Number of eggs produced per week	0.3366	Low Positive Correlation
Number of days operating	0.2952	Very Low Positive Correlation

Table 16 presents the result of the correlation between the business technical aspect and the SWOT Analysis of the researchers in terms of threats.

The correlation between weekly egg production and threats showed a low positive relationship ($R = 0.3366$), suggesting that increased preparedness slightly improves output. Respondents identified high temperatures, especially in summer, as a major threat. Gicheha (2020) notes that temperatures above the optimal range (12°C – 26°C) negatively affect chicken reproduction and egg quality.

Similarly, the correlation between operating days and threats was also low and positive ($R = 0.2952$), indicating that proactive threat management slightly increases operational consistency. Respondents operate 7 days a week to maintain security and address risks early. Piamonte (2022) emphasizes that preparation is key to resilience and long-term success.

5. Proposed Business Development Plan

Table 17. Proposed Business Development Plan

Problem	Solution	Objective	Marketing Activity	Budget	In Charge	Time Frame	Success Indicator
Break-even point during slaughter	Diversify products	Boost profitability	Research new tech for product innovation	Php 5,000	Owners/Managers	Nov 16 - Dec 16, 2025	New product ideas identified
Market competition	Improve quality, sanitation, freshness	Stand out from competitors	Conduct market research	Php 5,000	Owners/Managers	Nov 16 - Dec 16, 2025	Customers prefer your poultry products
Weak biosecurity	Limit access, enforce hygiene, train staff	Prevent disease outbreaks	Use PPE, disinfectants, promote hygiene	Php 20,000	Owners/Managers	Nov 16 - Dec 16, 2025	Farm remains disease-free
High input costs	Use cost-effective alternatives	Balance cost and quality	Promote cost-saving practices	Php 10,000	Owners/Managers	Nov 16 - Dec 16, 2025	Egg production unaffected by cost-cutting

IV. CONCLUSIONS AND RECOMMENDATIONS

The study showed that poultry farms in Peñaranda, Nueva Ecija differ widely in their egg production, with some producing as many as 155,200 eggs per week while others only around 35,000. Most farms operate daily, but they also face common challenges such as disease outbreaks, weak biosecurity, and strong competition in the market. The SWOT analysis highlighted that while the farms have clear strengths and opportunities, weaknesses and threats remain significant concerns.

To address these issues, farms with high production should focus on proper waste management to maintain product quality, while smaller farms may need to invest in facilities and expand their flocks to boost output.

Owners and managers are encouraged to embrace new technologies, strengthen feeding and nutrition programs, and provide continuous training for their workers on biosecurity and proper poultry care. It is also important to comply with government regulations and animal welfare standards. Since competition is a major concern, adopting innovative strategies like blue ocean approaches and conducting market research will help farms stand out. Future researchers may build on this study to explore other challenges and opportunities that were not covered.

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