

Public Perception of Laying Hen Fecal Waste in Tanete Village, Maritengngae District, Sidenreng Rappang Regency

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Abstract. This study aims to determine public perceptions of laying hen feces and the impacts felt by the community in Tanete Village, Maritengngae District, Sidenreng Rappang Regency. The study involved 36 respondents selected by purposive sampling from 203 residents living within a 500-meter radius of the farm. Data were collected through observation, interviews, and Likert-scale questionnaires, then analyzed using descriptive statistics. The results showed that public perception of laying hen feces was in the sufficient category (42%). The community is aware of the environmental impacts caused, but still accepts the existence of the farm because it provides economic benefits. The most perceived impacts include unpleasant odors (42%), disturbances in environmental cleanliness (47%), and an increase in the presence of flies (38%). In addition, waste also affects the comfort and daily activities of the community. In general, laying hen feces still cause environmental and social disturbances, so better waste management is needed to reduce the negative impacts felt by the community.

Keywords: *Environmental Quality, Social Impact, Waste Management, Public Comfort, Health.*

A. INTRODUCTION

The laying hen farming sector is a sub-sector of the livestock industry that plays a strategic role in providing animal protein for the Indonesian people. As the demand for eggs increases, the laying hen farming business continues to grow and become a source of income for the community, particularly in rural areas. In addition to contributing to the local economy, laying hen farming also plays a role in creating jobs and supporting regional food security (Amalia et al., 2023).

Beyond these economic benefits, laying hen farming also generates significant amounts of waste, particularly fecal waste. Poorly managed fecal waste has the potential to cause various environmental problems, such as unpleasant odors, increased fly populations, environmental pollution, and reduced comfort for residents living near the farm. According to Fitrah Khairi et al. (2021), suboptimal management of waste can increase the risk of environmental pollution due to intensive livestock farming activities. This situation demonstrates that waste management is a crucial aspect in maintaining a balance between the sustainability of livestock businesses and the quality of the community's environment.

The environmental impacts of livestock farming activities not only affect the physical condition of the environment but also shape public perceptions of livestock businesses. Perception is the process by which individuals receive, interpret, and evaluate an object or phenomenon based on their experience, knowledge, and the environmental conditions they encounter. Public perception is an important indicator of the level of public acceptance of a business activity in their neighborhood (Abdi et al., 2018).

Research by Saade et al. (2021) shows that communities living near poultry farms tend to base their assessments on the environmental impacts they directly experience, such as odor, environmental cleanliness, and the presence of insects. Meanwhile, Gazalli (2024) reports that public perception of laying hen farms can be influenced by the economic benefits they derive from the business. Conversely, Syamsuddin et al. (2023) found that environmental pollution from laying hen farms can impact the comfort level of surrounding communities. These

differences in research findings indicate that public perception is significantly influenced by environmental conditions and the characteristics of the study area.

Sidenreng Rappang Regency is known as a center for broiler chicken egg production in South Sulawesi. The high level of egg-laying chicken farming in this area has a significant economic impact, but on the other hand, it has the potential to cause environmental problems if the waste produced is not managed optimally. Tanete Village is one of the areas with egg-laying chicken farms located close to residential areas.

Numerous studies have been conducted on public perceptions of chicken farms, but most have focused on the impacts of livestock farming in general. Studies specifically analyzing public perceptions of egg-laying chicken fecal waste and the impacts experienced by the community in Tanete Village are still limited. Therefore, this study is novel in that it examines public perceptions directly related to the social and environmental impacts of egg-laying chicken fecal waste on the community living near the farms.

Based on this description, this study aims to analyze public perceptions of egg-laying chicken fecal waste and identify the impacts experienced by the community due to the presence of this waste in Tanete Village, Maritengngae District, Sidenreng Rappang Regency. The research results are expected to provide input for livestock breeders, communities, and local governments in formulating livestock waste management strategies that are more effective, environmentally friendly, and sustainable.

B. LITERATURE REVIEW

1. Laying Hen Farming

Laying hen farming is an important subsector in providing animal protein and improving the community's economy. In addition to providing economic benefits through job creation and increased income, the laying hen business also produces large amounts of waste, particularly feces, which have the potential to cause environmental pollution if not managed properly (Hidayat et al., 2020; Shakti, 2023).

The presence of farms close to residential areas often causes environmental impacts in the form of odors, air pollution, and disruption to community comfort (Rahman & Nasrullah, 2021). Therefore, proper waste management is a crucial factor in maintaining harmonious relations between farmers and the surrounding community (Setyawan, 2016).

2. Livestock Waste and Its Impact

Livestock waste includes feces, urine, leftover feed, and wastewater generated during the livestock raising process. If not managed properly, this waste can pollute air, water, and soil, as well as increase fly populations, which are a nuisance to surrounding communities (Defari et al., 2017).

The most common environmental impact experienced by the public is the unpleasant odor caused by ammonia, methane, and hydrogen sulfide gases from the decomposition of livestock manure (Wibowo, 2018). In addition to impacting the environment, livestock waste can also cause social complaints and influence public acceptance of livestock farming (Mataram, 2024).

3. Public Perception of the Environment

Perception is the process by which individuals interpret and assign meaning to conditions in their environment (Robbins & Judge, 2017). Public perception of the environment is influenced by their level of knowledge, experience, and concern for the surrounding environment (Sarwono, 2018).

In the context of laying hen farming, public perception is formed based on directly perceived impacts, such as odor, environmental cleanliness, and the presence of flies (Saade et al., 2021). The greater the perceived disturbance, the greater the likelihood of negative perceptions of the livestock farm (Abdi et al., 2018).

4. Chicken Feces Waste Management

Chicken feces waste management aims to reduce negative impacts on the environment while increasing the waste's utility. Chicken feces can be used as organic fertilizer and biogas feedstock if properly managed (Fitrah Khairi et al., 2021). Effective waste management requires technological support, farmer awareness, and community involvement (Yulianti, 2022). With proper management, the impact of pollution can be minimized, leading to a more positive public perception of livestock farming (Wibowo, 2018).

C. METHOD

This study employed a quantitative descriptive research approach. The quantitative approach was used to obtain and analyze numerical data to describe the community's perceptions of laying-hen manure waste in Tanete Village. According to Sugiyono (2018), quantitative research is grounded in positivist philosophy and is used to investigate specific populations or samples through research instruments and statistical data analysis. The study was conducted among residents living around the laying-hen farming area in Tanete Village. The population consisted of residents living in the vicinity of the farm, while the sample was determined based on the criteria of residents who were aware of and/or had experienced the impacts of laying-hen manure waste.

The data consisted of primary and secondary data. Primary data were collected directly from respondents through questionnaires, interviews, and field observations. The questionnaire served as the main instrument for measuring community perceptions of laying-hen manure waste, including environmental conditions, disturbances caused by the waste, impacts on health and comfort, and waste management practices. Meanwhile, secondary data were obtained from books, scientific journals, research articles, village government documents, and other relevant sources. Secondary data were used to complement and strengthen the findings obtained from the primary data.

The research instrument employed a five-point Likert scale, consisting of strongly agree, agree, neutral, disagree, and strongly disagree. Before being administered, the instrument was tested for validity and reliability. Validity was assessed using the Pearson Product-Moment correlation by comparing the calculated (r)-value ((r_{count})) with the critical (r)-value ((r_{table})), while reliability was assessed using Cronbach's Alpha. An item was considered valid when $(r_{\text{count}} > r_{\text{table}})$, while the instrument was considered reliable when the Cronbach's Alpha value met the established reliability criterion. The collected data were subsequently processed through editing, coding, scoring, tabulation, and data cleaning.

Data analysis was conducted using descriptive statistics with the assistance of SPSS. The analysis included frequency, percentage, mean, and standard deviation to describe the community's perceptions of laying-hen manure waste. The percentage was calculated using the formula $(P = (f/N) \times 100\%)$, where (P) represents the percentage, (f) represents the frequency of responses, and (N) represents the total number of respondents. The results were presented in tables and descriptive narratives and categorized according to the level of community perception. This analysis was intended to provide an overall description of the community's assessment of the presence and impacts of laying-hen manure waste in Tanete Village.

D. RESULTS AND DISCUSSION

Before conducting further analysis of the research data, the research instrument was first tested to ensure that it was able to measure the research variables accurately and consistently. The instrument testing consisted of validity and reliability tests. The validity test was conducted to determine the accuracy of each item in measuring community perceptions of laying-hen manure waste, while the reliability test was conducted to assess the consistency of the instrument in producing reliable data. The results of the validity test for each instrument item are presented in Table 1.

Table 1. Validity Test

Item	r-count	r-table	Description
Odor Impact	.765**	0.329	Valid
Comfort	.751**	0.329	Valid
Activities	.720**	0.329	Valid
Eating Pattern Disturbance	.869**	0.329	Valid
Flies	.800**	0.329	Valid
Cleanliness	.751**	0.329	Valid
Perception	.860**	0.329	Valid
Community Acceptance	.916**	0.329	Valid
Community Attitudes	.818**	0.329	Valid

Based on Table 1, all instrument items have an *r*-count greater than the *r*-table value of 0.329. Therefore, all statement items in the research instrument are considered valid and suitable for measuring community perceptions of laying-hen manure waste in Tanete Village.

The validity test was followed by a reliability test to determine the internal consistency of the research instrument. The results of the reliability test are presented in Table 2.

Table 2. Reliability Test

Variable	Cronbach's Alpha	N of Items	Description
Community perceptions of laying-hen manure waste	0.932	9	Reliable

Based on the reliability test conducted using SPSS, the instrument obtained a Cronbach's Alpha value of 0.932 for nine items. This value exceeds the minimum reliability threshold of 0.60. Therefore, all statement items in the research instrument are considered reliable and suitable for use as a data collection instrument in this study.

Table 3. Distribution of Responses for Odor Impact

Category	Frequency	Percentage (%)
Good	7	19%
Moderate	14	39%
Poor	15	42%
Total	36	100%

The findings are consistent with Defari et al. (2017), who stated that poorly managed livestock waste can produce strong odors as a result of the decomposition of organic matter. Wibowo (2018) further explained that ammonia gas released from livestock manure is one of the main causes of reduced air quality around livestock farms. Similar findings were reported by Mataram (2024), who found that livestock waste odors were among the main complaints of communities in rural areas. However, these findings differ from those of Fitrah Khairi et al. (2021) and Gazalli (2024), who found that proper waste management can reduce unpleasant odors so that they no longer constitute a major problem for surrounding communities.

Table 4. Distribution of Responses for Comfort

Category	Frequency	Percentage (%)
Good	10	28%
Moderate	13	36%
Poor	13	36%
Total	36	100%

Based on the distribution of responses regarding comfort, out of 36 respondents, 10 respondents (28%) were categorized as good, 13 respondents (36%) as moderate, and 13 respondents (36%) as poor. These findings indicate that the presence of laying-hen manure waste has affected the environmental comfort experienced by some members of the community. This finding is consistent with Pambudi and Sutrisno (2022), who stated that livestock waste can reduce community comfort due to unpleasant odors and declining environmental quality. Similar findings were reported by Mataram (2024), who found that communities living near livestock farms frequently experienced discomfort due to waste-related impacts. However, Gazalli (2024) and Abdi et al. (2018) found that communities could maintain a comfortable living environment when farmers properly managed waste and maintained good social relationships with surrounding residents.

Table 5. Distribution of Responses for Daily Activities

Category	Frequency	Percentage (%)
Good	10	28%
Moderate	13	36%
Poor	13	36%
Total	36	100%

Based on the distribution of responses concerning daily activities, 10 respondents (28%) were categorized as good, 13 respondents (36%) as moderate, and 13 respondents (36%) as poor. These findings indicate that laying-hen manure waste has a considerable effect on the daily activities of community members. This finding is consistent with Wibowo (2018), who stated that air pollution resulting from livestock waste can disrupt community activities. Mataram (2024) similarly found that communities experienced disruptions to their daily activities due to unpleasant odors and flies. However, these findings differ from Rahman and Nasrullah (2021) and Gazalli (2024), who reported that community activities generally remained normal because the impacts of livestock waste were still considered tolerable.

Table 6. Distribution of Responses for Eating Pattern Disturbance

Category	Frequency	Percentage (%)
Good	6	17%
Moderate	16	44%
Poor	14	39%
Total	36	100%

Based on the distribution of responses regarding eating pattern disturbance, 6 respondents (17%) were categorized as good, 16 respondents (44%) as moderate, and 14 respondents (39%) as poor. The results show that the majority of respondents fell into the moderate category. This indicates that odors from laying-hen manure waste occasionally affect the appetite of community members and their families, although the severity of the disturbance is not consistently experienced by all respondents. This finding is consistent with Wibowo (2018), who explained that strong odors from livestock waste can cause discomfort and affect people's appetite. Similar findings were reported by Defari et al. (2017), who stated that poorly managed livestock waste can reduce the quality of community well-being. However, these findings differ from Rahman and Nasrullah (2021) and Gazalli (2024), who found that most

community members did not experience eating pattern disturbances despite living near livestock farms.

Table 7. Distribution of Responses for Environmental Cleanliness

Category	Frequency	Percentage (%)
Good	3	9%
Moderate	16	44%
Poor	17	47%
Total	36	100%

Based on the distribution of responses concerning environmental cleanliness, 3 respondents (9%) were categorized as good, 16 respondents (44%) as moderate, and 17 respondents (47%) as poor. The results indicate that environmental cleanliness was predominantly categorized as poor. This finding is consistent with Defari et al. (2017), who stated that livestock waste can reduce environmental cleanliness when it is not properly managed. Wqi and Nanggulan (2022) further explained that livestock waste can contaminate the surrounding environment and increase the risk of health problems. Similar findings were reported by Mataram (2024), who identified a decline in environmental quality associated with livestock waste. However, these findings differ from Fitrah Khairi et al. (2021) and Gazalli (2024), who found that proper waste treatment can help maintain environmental cleanliness in surrounding communities.

Table 8. Distribution of Responses for Fly Presence

Category	Frequency	Percentage (%)
Good	11	31%
Moderate	14	38%
Poor	11	31%
Total	36	100%

The findings show that the presence of flies was predominantly categorized as moderate, accounting for 38% of respondents. This indicates that community members still experienced an increase in fly populations associated with laying-hen manure waste, although the level of disturbance remained tolerable for some respondents. This finding is consistent with Defari et al. (2017), who explained that inadequately managed livestock waste can increase fly populations around animal housing facilities and residential areas. Similar findings were reported by Mataram (2024), who identified flies as one of the main complaints among communities living near laying-hen farms. However, these findings differ from Fitrah Khairi et al. (2021) and Gazalli (2024), who found that proper waste management can control fly proliferation and prevent it from becoming a major community complaint.

Table 9. Distribution of Responses for Community Perception

Category	Frequency	Percentage (%)
Good	9	25%
Moderate	15	42%
Poor	12	33%
Total	36	100%

The findings indicate that community perceptions of laying-hen manure waste were predominantly categorized as **moderate**, accounting for 42% of respondents. This suggests that community members are aware of the environmental impacts generated by livestock waste but remain relatively accepting of the farm's presence because it provides economic benefits to some residents. This finding is consistent with Yasir et al. (2023), who stated that communities living near laying-hen farms tend to have mixed perceptions, recognizing both environmental disturbances and the economic benefits generated by livestock farming. Similar

findings were reported by Abdi et al. (2018), who found that community perceptions are influenced by the balance between economic benefits and environmental impacts. However, these findings differ from Syamsuddin et al. (2023) and Mataram (2024), who found that community perceptions tended to be predominantly negative due to the high level of environmental pollution experienced.

Table 10. Distribution of Responses for Community Acceptance

Category	Frequency	Percentage (%)
Good	12	33%
Moderate	13	36%
Poor	11	31%
Total	36	100%

Based on the distribution of responses concerning community acceptance, 12 respondents (33%) were categorized as good, 13 respondents (36%) as moderate, and 11 respondents (31%) as poor. The results indicate that community acceptance of the laying-hen farm was predominantly categorized as moderate. This means that some community members continue to accept the farm because of its economic benefits but expect improved waste management to minimize environmental disturbances. This finding is consistent with Yasir et al. (2023), who stated that communities continue to accept livestock farms because they provide economic benefits, including employment opportunities and increased income. Gazalli (2024) also found that some communities continued to accept livestock farms as long as their environmental impacts remained manageable. However, Abdi et al. (2018) and Syamsuddin et al. (2023) found that communities tended to reject livestock farms when the environmental impacts were perceived to outweigh the benefits received.

Table 11. Distribution of Responses for Community Attitudes

Category	Frequency	Percentage (%)
Good	10	28%
Moderate	12	33%
Poor	14	39%
Total	36	100%

Based on the distribution of responses concerning community attitudes, 10 respondents (28%) were categorized as good, 12 respondents (33%) as moderate, and 14 respondents (39%) as poor. This finding is consistent with Wahyudi (2019), who stated that community participation in environmental protection tends to increase when supported by government attention and business actors. Similar findings were reported by Saade et al. (2021), who stated that the level of community knowledge influences attitudes toward livestock farming activities. However, these findings differ from Gazalli (2024) and Abdi et al. (2018), who found that communities tended to remain passive and had limited involvement in livestock waste management efforts.

Overall, the distribution of responses indicates that the people of Tanete Village experience various impacts from laying-hen manure waste, particularly odor and environmental cleanliness, which show relatively high proportions in the poor category. These findings suggest that although the community continues to recognize the economic benefits associated with laying-hen farming, environmental disturbances remain a significant concern. Therefore, improved manure waste management is needed to minimize odors, maintain environmental cleanliness, control fly populations, and reduce disturbances to community activities and comfort.

E. CONCLUSION

Community perceptions of the presence of laying-hen manure waste were categorized as moderate, accounting for 42% (15 respondents). This indicates that the community is aware of the environmental impacts caused by livestock waste but remains relatively accepting of the farm's presence because it provides economic benefits to some members of the community. The impacts perceived by the community include unpleasant odors, disturbances to environmental comfort, disruption of daily activities, disturbances to eating patterns, reduced environmental cleanliness, and an increased presence of flies. The most prominent impacts perceived by the community were environmental cleanliness, which was categorized as low at 47% (17 respondents), and odor impact, which was categorized as low at 42% (15 respondents). In addition, disturbances to eating patterns were categorized as moderate at 44% (16 respondents), the presence of flies was categorized as moderate at 38% (14 respondents), and community acceptance of the farm's presence was categorized as moderate at 36% (13 respondents). These findings indicate that laying-hen manure waste continues to cause environmental disturbances perceived by the community, highlighting the need for improved waste management practices.

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