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An Assessment of the Perceived Implementation of the Stray Dog Control Ordinance in the Municipality of Sibulan

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Index Terms:

perceived implementation, stray dog control ordinance, road accidents, dog bite incidence, public awareness, impounding, vaccination and registration

Abstract. This study assessed the perceived implementation of the Stray Dog Control Ordinance and examined its relationship with stray dog–related road accidents and dog bite incidence in the Municipality of Sibulan, Negros Oriental. Using a descriptive–correlational design, data were collected from 120 residents through a validated researcher-made questionnaire, supported by secondary municipal records. The instrument evaluated four key dimensions of implementation: enforcement, impounding, registration and vaccination awareness, and public awareness. Statistical tools included mean, standard deviation, and Spearman rank correlation coefficient. Findings revealed that the overall level of ordinance implementation was low across all dimensions, indicating weak, inconsistent, and insufficient operational practices. Despite the presence of the ordinance, both stray dog–related road accidents and dog bite incidents were reported as frequent, highlighting persistent public safety and health risks in the community. Correlation analysis showed that registration and vaccination awareness, along with public awareness, had significant negative relationships with road accidents, suggesting that increased awareness contributes to reduced risk. In contrast, impounding and registration and vaccination awareness were significantly associated with lower dog bite incidence. However, enforcement demonstrated no significant relationship with either outcome, implying limited effectiveness in its current state. These results suggest that preventive and awareness-driven strategies play a more immediate and measurable role in mitigating risks compared to weakly implemented enforcement measures. The study concludes that improving awareness, vaccination, and registration efforts can significantly reduce incidents, while enforcement requires strengthening to enhance overall ordinance effectiveness. It is recommended that local authorities intensify public education campaigns, expand vaccination and registration programs, and improve impounding operations to ensure better implementation and promote safer, healthier communities.

Introduction

Stray and free-roaming dogs represent a persistent and complex challenge to public health and road safety, particularly in developing and rapidly urbanizing regions where uncontrolled populations and human–animal interactions are prevalent (Viozzi, 2026; World Organization for Animal Health, 2024). These encounters not only disrupt traffic flow but also contribute to injuries, fatalities, and economic losses (World Organization, 2023). In addition, dog bites remain a major public health concern, as they are the primary source of rabies transmission, a preventable yet fatal disease that continues to affect many low- and middle-income countries (World Health Organization, 2024).

In the Philippine context, the issue of stray and free-roaming dogs is further intensified by gaps in the implementation of animal control policies. Republic Act No. 9482, also known as the Anti-Rabies Act of 2007, mandates local government units

(LGUs) to enforce responsible pet ownership through dog registration, vaccination, impounding, and control measures. Despite this legal framework, studies indicate that high roaming rates among owned dogs persist, often due to weak enforcement, limited resources, and low public compliance (Chaudhari et al., 2022). Recent reports also highlight increasing cases of stray dog–related road accidents and dog bites in various parts of the country, reflecting the ongoing risks associated with ineffective ordinance implementation (Philippine News Agency, 2024).

Existing literature has extensively examined dog population management and rabies prevention; however, a notable research gap remains in understanding how local ordinance implementation relates simultaneously to both road safety and public health outcomes (Smith et al., 2019; World Health Organization, 2024). Most studies focus on isolated aspects such as vaccination coverage or bite incidence, often using descriptive approaches without integrating multiple indicators of effectiveness (Sasmal et al., 2021; Smith et al., 2019). Furthermore, available municipal data on road accidents and dog bite cases are typically used for monitoring rather than for evaluating policy effectiveness, limiting evidence-based decision-making (World Health Organization, 2024). This disconnect highlights the need for a more comprehensive assessment that links ordinance implementation with measurable safety outcomes.

The timeliness of this study is underscored by increasing urbanization, growing vehicle density, and persistent public health concerns related to rabies and animal-related accidents. In municipalities like Sibulan, Negros Oriental, where residential areas intersect with major road networks, the presence of stray dogs creates continuous exposure to road hazards and potential bite incidents. Observations of frequent stray dog encounters, coupled with reported cases of accidents and injuries, indicate a pressing need to evaluate the effectiveness of existing control measures.

This study supports the United Nations Sustainable Development Goals, particularly SDG 3 (Good Health and Well-Being), SDG 11 (Sustainable Cities and Communities), and SDG 16 (Peace, Justice, and Strong Institutions). By evaluating the effectiveness of stray dog control ordinances in reducing road accidents and dog bites, this study promotes public safety, helps prevent injuries and health risks, and contributes to safer and more sustainable transport systems.

Statement of the Problem

Specifically, this study sought to answer the following questions:

1. What is the perceived level of implementation of the Stray Dog Control Ordinance in terms of:
   1.1enforcement activities,
   1.2impounding operations,
   1.3registration and vaccination campaigns, and
   1.4public awareness programs?
2. What is the frequency of:
   2.1Stray dog–related traffic accidents
   2.2Dog bite cases
3. Is there a significant relationship between the level of implementation of the Stray Dog Control Ordinance and:
   3.1Stray dog–related traffic accidents?
   3.2Dog bite incidence?

Methodology

Research Design

The research utilized the descriptive–correlational survey design. It was descriptive because it determined the level of implementation of the Stray Dog Control Ordinance in terms of enforcement, impounding, registration and vaccination awareness, and public awareness programs; described the frequency of stray dog–related road accidents in the Municipality of Sibulan; and assessed the frequency of dog bite incidence as experienced or observed by the respondents. On the other hand, it was also correlational because the level of ordinance implementation was examined in relation to stray dog–related road accidents and was correlated with dog bite incidence to determine whether significant relationships existed between the variables.

Research environment

This study was conducted in the Municipality of Sibulan, Negros Oriental, Philippines. Sibulan was selected as the research locale due to its strategic geographic position as a transit municipality directly adjacent to Dumaguete City. As a growing urban–rural interface area, Sibulan experienced increasing vehicular movement, residential expansion, and human–animal interaction along public roads. Compared to other municipalities in Negros Oriental, Sibulan presented a relevant setting

for examining stray dog control implementation because it combined residential communities, national highway segments, and barangay roads where free-roaming dogs were commonly observed. Its proximity to Dumaguete City increased traffic density, thereby heightening the potential risks of stray dog–related road accidents and dog bite incidents. Furthermore, the Municipality of Sibulan had an existing Stray Dog Control Ordinance implemented under the framework of Republic Act No. 9482 (Anti-Rabies Act of 2007), making it an appropriate site for evaluating ordinance implementation and its safety outcomes. The availability of municipal records on stray dog population, impoundment operations, and road incidents also supported the feasibility and reliability of data collection in the area.

Research respondents

The respondents of this study were residents of the Municipality of Sibulan, Negros Oriental. Residents were selected as the primary respondents because they were directly exposed to stray and free-roaming dogs within their communities and public roads. As daily road users whether as pedestrians, motorists, or household members they were able to observe ordinance implementation practices and experience stray dog–related incidents such as road encounters and dog bites.

To ensure proper representation across different areas of the municipality, the study utilized stratified random sampling. The population of residents was grouped according to barangay, and respondents were proportionally selected from each selected barangay. Due to logistical challenges, accessibility concerns in some barangays, and researcher safety considerations, only 120 respondents were reached and were able to participate in the study. This number was considered sufficient to provide a reliable assessment of residents' observations and experiences regarding stray dog–related incidents, as a minimum sample size of 100 respondents is recommended for small-scale survey studies (Bullen, 2022).

This approach ensured that various communities within Sibulan were adequately represented and minimized sampling bias. The final stratified sample distribution was based on the total number of households in the municipality (N = 15,576), with a computed sample size of 389 respondents; however, only 120 respondents were successfully surveyed.

Research instruments

This study utilized a researcher-made questionnaire as the primary instrument for data collection. The instrument used was the Stray Dog Control Ordinance Implementation and Road Safety Assessment Questionnaire. The questionnaire was designed to measure the level of implementation of the stray dog control ordinance and its perceived effectiveness in reducing stray dog–related road accidents in Sibulan, Negros Oriental. It aimed to determine the level of implementation of the stray dog control ordinance and the extent of stray dog–related traffic accidents and dog bite incidents within the municipality.

The instrument was divided into three main parts. Part I displayed the respondents' profile. This section gathered basic demographic information of the respondents, specifically their barangay of residence within the Municipality of Sibulan, Negros Oriental. Part II covered the frequency of stray dog–related incidents. This section measured how often stray dog–related road accidents and dog bite incidents occurred in the respondents' community based on their observation or experience. Part III, perceived level of ordinance implementation, measured the frequency and perceived severity of enforcement, impounding, registration and vaccination awareness, and public awareness.

A dry run was conducted to determine the reliability of the researcher-made questionnaire prior to the actual data gathering. Thirty (30) respondents participated in the dry run. The items were tested for reliability using Cronbach's alpha. This test was considered one of the most appropriate methods for survey research where items were not scored as right or wrong and where responses varied across participants (McMillan et al., 2001). Cronbach's alpha was computed to assess the internal consistency and reliability of the instrument. It measured the extent to which all items in a scale were positively correlated with one another. The value of Cronbach's alpha ranged from 0 to 1, where higher values indicated greater reliability, and a value of 0.70 or higher was generally considered acceptable.

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Ethical considerations

This study entitled "An Assessment of the Perceived Implementation of the Stray Dog Control Ordinance in the Municipality of Sibulan" strictly adhered to established ethical research principles to ensure the protection of participants, responsible handling of data, and the integrity of the research process. The conduct of the study was aligned with academic research standards and relevant legal frameworks, particularly Republic Act No. 9482, which promoted responsible pet ownership and humane animal management. Prior to data collection, ethical clearance was secured from the Foundation University Ethics Review Board to ensure that all research procedures complied with institutional ethical standards. All respondents were clearly informed about the purpose, objectives, scope, and procedures of the study. They were provided with a brief explanation of how the data would be used and were assured that participation was voluntary. Respondents were informed that they could decline to answer any question or withdraw from participation at any time without penalty or negative consequences. The completion and submission of the questionnaire signified their informed consent to participate in the study.

During the data collection process, the researchers maintained a respectful, neutral, and professional approach when interacting with respondents to create a comfortable environment for participation. Clear instructions were provided before answering the questionnaire, and respondents were given sufficient time to complete the instrument. They were also informed that they could skip any question they felt uncomfortable answering. Measures to protect privacy and confidentiality were strictly observed. No unnecessary personal identifiers such as names or exact addresses were collected, and responses were treated with anonymity whenever possible. The study ensured that participation posed no physical, emotional, social, or psychological risk to the respondents.

After the completion of the survey, all collected data were handled with strict confidentiality. The accomplished questionnaires were securely stored, and electronic files were protected through restricted access. Only the researchers and the designated statisticians were allowed to access the data for analysis. The information gathered was used strictly for academic and research purposes and not for any personal, political, or commercial use. In presenting the results of the study, findings were reported in summarized and aggregate form to ensure that individual respondents, barangays, or offices could not be identified. Upon completion of the study, the data were archived in accordance with the research guidelines of Foundation University. Participants were given the opportunity to withdraw their responses within the period of the 3rd to 4th week of March after submission; within this duration, they were able to request the removal of their data without any penalty. After the allotted time, all collected information was anonymized, ensuring that individual responses could no longer be identified or withdrawn. Any unused or unnecessary identifiable information was properly disposed of following institutional ethical standards. The researchers remained responsible for ensuring the protection, confidentiality, and ethical handling of all collected information even after the study had been completed.

Moreover, the researchers declared that artificial intelligence (AI) tools such as ChatGPT, Consensus, Perplexity AI, and MyBib were utilized solely as support tools in the conduct of this study. These tools were used for language enhancement, literature search assistance, and citation formatting. All outputs generated were carefully reviewed, validated, and revised by the researchers to ensure accuracy and alignment with academic standards. The researchers maintained full responsibility for the content, analysis, and conclusions of the study. The AI usage declaration was attached as Appendix A. Voluntary participation. Participation in this research was entirely voluntary. No respondent was coerced, pressured, or obligated to participate. The researcher ensured that no form of incentive or compensation was offered that might influence the respondents' answers or decision to participate. All responses were given freely and based on the respondents' honest assessment of ordinance implementation and road safety conditions.

Research procedure

After the title and design hearing, the researchers incorporated all the corrections and suggestions provided by the panel members. Once the revisions were completed, a formal letter of request was prepared and was submitted to the Local Government Unit (LGU) of Sibulan, Negros Oriental, particularly to the Office of the Municipal Mayor, Municipal Agriculture Office, Municipal Health Office, and Local Risk Reduction Management Office. This letter was endorsed by the research adviser and the dean of the School of Industrial Engineering and Technology of Foundation University to request permission to conduct the study and distribute survey questionnaires to residents. Upon approval, the researchers proceeded with the distribution of questionnaires to the selected respondents in the Municipality of Sibulan. Prior to administering the questionnaire, the researchers explained the purpose, importance, and procedures of the study to the respondents. The disclosure statement was also presented to ensure that respondents understood that participation was voluntary and that all responses would be treated with confidentiality. The survey questionnaires were then distributed to the selected respondents who were residents of the municipality. The respondents were given enough time to answer the questions. After completion, the questionnaires were collected immediately to ensure a high retrieval rate. After the retrieval of the questionnaires, the responses were encoded and organized using Microsoft Excel. The data collected were then analyzed using JAMOVI statistical software. The results of the analysis were interpreted to determine the level of implementation of the Stray Dog Control Ordinance and its relationship to stray dog–related road accidents and dog bite incidence in the Municipality of Sibulan.

Statistical Treatment of the Data

The data gathered in this study were analyzed using appropriate statistical tools. The mean was employed to determine the level of implementation of the Stray Dog Control Ordinance in terms of enforcement, impounding, registration and vaccination awareness, and public awareness. It was also used to measure the perceived occurrence of stray dog–related road accidents and dog bite incidents within the community. Percentage was utilized to describe the profile of the respondents and to present the proportion of individuals who had experienced or observed stray dog–related incidents in their respective barangays. This provided a clearer understanding of the distribution of responses based on demographic and experiential factors. To examine the relationships among variables, Spearman's Rank-Order Correlation was utilized. Specifically, it was used to determine the relationship between (a) the level of implementation of the Stray Dog Control Ordinance and the frequency of stray dog–related road accidents, and (b) the level of implementation of the ordinance and dog bite incidence. Spearman's Rank-Order Correlation was deemed appropriate for this analysis due to the ordinal nature of the Likert scale data and its non-requirement of normal distribution assumptions. The following scales were used to describe the level of implementation of the Stray Dog Control Ordinance and the frequency of stray dog–related incidents in the community.

Range	Level of Implementation (LoI)	Verbal Interpretation (VI)
4.21 – 5.00	Very High (VH)	Very Frequent (VF)
3.41 – 4.20	High (H)	Frequent (F)
2.61 – 3.40	Moderate (M)	Sometimes (S)
1.81 – 2.60	Low (L)	Rare (R)
1.81 – 2.60	Very Low (VL)	Never (N)

Results and Discussion

This chapter presents, analyzes, and interprets the data gathered in the study. It is organized into three parts: (1) the level of implementation of the Stray Dog Control Ordinance in terms of enforcement, impounding, registration and vaccination awareness, and public awareness; (2) the frequency of stray dog–related road accidents and dog bite incidence; and (3) the relationship between ordinance implementation and these incidents. Data were collected from 120 residents of Sibulan, Negros Oriental and are presented in tables using mean, standard deviation, and correlation analysis. Each table is followed by a brief interpretation to explain the results.

Indicators	$\bar{x}$	LoI	*SD*
Coordination among enforcement personnel appears effective.	2.43	L	0.93
Barangay officials actively address stray dog complaints.	2.41	L	0.89
The Stray Dog Control Ordinance is consistently enforced in my barangay.	2.38	L	0.86
Monitoring and inspection activities are conducted regularly.	2.29	L	0.91
Violators are formally apprehended and penalized.	2.28	L	0.83
Composite	**2.36**	**L**	**0.88**

Table 1 Perceived level of Implementation of the Stray Dog Control Ordinance in Sibulan in Terms of Enforcement Activities (n =120)

Table 1 shows the perceived level of implementation of the Stray Dog Control Ordinance in Sibulan Municipality in terms of enforcement activities. The results indicate a low level of implementation, with a composite mean of 2.36 (SD = 0.88), suggesting that enforcement practices are weak and inconsistently applied across barangays. These findings imply that the ordinance does not effectively translate into actual enforcement actions, limiting its ability to control stray dog populations and improve public safety. This reflects the broader principle that the presence of a policy alone is insufficient without proper execution and monitoring. Specifically, the results highlight that coordination among enforcement personnel ($\bar{x}$ = 2.43) and barangay response to complaints ($\bar{x}$ = 2.41) are implemented to a low level. This suggests that while basic coordination mechanisms exist, they are not strong enough to ensure consistent enforcement. Such findings align with studies emphasizing that partial or inconsistent coordination reduces policy effectiveness and weakens compliance among stakeholders (Pressman et al., 1973; Smith et al., 2019). On the other hand, formal apprehension and penalization of violators ($\bar{x}$ = 2.28) and monitoring and inspection activities ($\bar{x}$ = 2.29) are further implemented to a low level. These results indicate critical gaps in enforcement operations, particularly in regulatory actions that directly influence compliance. The absence of consistent monitoring and penalties may allow irresponsible pet ownership to persist, contributing to the continued presence of stray and free-roaming dogs. This supports literature suggesting that strict enforcement mechanisms are essential in reducing dog-related risks and improving public safety outcomes (Duncan- Sutherland et al., 2022; World Health Organization, 2025).

Indictors	$\bar{x}$	**LoI**	***SD***
The LGU has adequate animal control facilities.	2.57	L	1.00
Proper procedures are followed when stray dogs are impounded.	2.48	L	0.95
Retrieval and penalty procedures are properly implemented.	2.36	L	0.94
Humane handling procedures are observed during capture.	2.32	L	0.93
Regular impounding operations are conducted in my area.	2.23	L	0.87
Composite	**2.39**	**L**	**0.94**

Table 2 Perceived level of Implementation of the Stray Dog Control Ordinance in Sibulan in Terms of Impounding Activities (n= 120)

Table 2 shows the perceived level of implementation of the Stray Dog Control Ordinance in Sibulan Municipality in terms of impounding activities. The results indicate a low level of implementation, with a composite mean of 2.39 (SD = 0.94), suggesting that impounding practices are weak and inconsistently carried out across barangays. These findings imply that impounding operations are not fully functional, limiting their effectiveness in controlling stray and free-roaming dog populations and reducing related public safety risks. This reflects the broader principle that the effectiveness of animal control programs depends not only on the presence of facilities and policies but also on their consistent implementation and operational sustainability. Specifically, the results highlight that the availability of animal control facilities ($\bar{x}$ = 2.57) and adherence to proper impounding procedures ($\bar{x}$ = 2.48) are implemented to a low level. This suggests that while certain structures and procedures are in place, they are not sufficient or consistently applied to support efficient impounding operations. Such findings indicate partial implementation, where existing resources are underutilized or inadequately managed. This is consistent with studies emphasizing that effective impounding systems require adequate facilities, trained personnel, and sustained operations to ensure long-term impact (Totton et al., 2010). On the other hand, regular impounding operations ($\bar{x}$ = 2.23), humane handling during capture ($\bar{x}$ = 2.32), and implementation of retrieval and penalty procedures ($\bar{x}$ = 2.36) are further implemented to a low level. These results indicate significant gaps in operational consistency, ethical practices, and enforcement mechanisms. The lack of regular impounding activities and weak implementation of penalties may reduce accountability among pet owners, allowing dogs to continue roaming freely in the community. Additionally, limited adherence to humane handling standards may affect public trust and cooperation with animal control efforts. These findings support literature suggesting that effective dog population management requires consistent operations, proper enforcement, and humane practices to achieve sustainable outcomes (Ma et al., 2020; World Health Organization, 2024).

Indicators	$\bar{x}$	**LoI**	***SD***
Vaccination drives are accessible and convenient for residents.	2.57	L	1.04
Anti-rabies vaccination campaigns are conducted regularly in my barangay.	2.52	L	0.96
Rabies prevention programs are actively promoted in the community.	2.42	L	1.07
Dog registration requirements are properly enforced in my area.	2.36	L	0.99
I have received clear information about dog registration and rabies prevention.	2.35	L	1.06
Composite	**2.44**	**L**	**1.02**

Table 3 Perceived level of Implementation of the Stray Dog Control Ordinance in Sibulan in Terms of Registration and Vaccination Awareness Activities (n=120)

Table 3 shows the perceived level of implementation of the Stray Dog Control Ordinance in Sibulan Municipality in terms of registration and vaccination awareness activities. The results indicate a low level of implementation, with a composite mean of 2.44 (SD = 1.02), suggesting that registration and vaccination awareness efforts are weak and inconsistently implemented across barangays. These findings imply that awareness-related programs are not effectively reaching residents, limiting their role in promoting responsible pet ownership and rabies prevention. This reflects the broader principle that public health initiatives require consistent delivery and community engagement to achieve effective outcomes.

Specifically, the results highlight that vaccination drives being accessible and convenient ($\bar{x}$ = 2.57) and the regular conduct of anti-rabies vaccination campaigns ($\bar{x}$ = 2.52) are implemented to a low level. This suggests that while vaccination services are available, they may be limited in accessibility, irregular in implementation, or not widely reaching the target population. Such findings indicate partial implementation, where existing services are not maximized to achieve adequate coverage. This is consistent with studies emphasizing that effective rabies prevention depends on regular, accessible, and widespread vaccination programs (World Health Organization, 2024).

On the other hand, clear information dissemination on registration and rabies prevention ($\bar{x}$ = 2.35) and enforcement of dog registration requirements ($\bar{x}$ = 2.36) are further implemented to a low level. These results indicate gaps in communication and enforcement mechanisms. The lack of sufficient information dissemination may limit residents' awareness and understanding of registration policies and rabies prevention practices, while weak enforcement reduces compliance among pet owners. As a result, participation in vaccination and registration programs may remain low. These findings support literature suggesting that strong public awareness and consistent enforcement are essential components of effective rabies control programs (World Health Organization, 2024).

Overall, the results imply that both vaccination efforts and awareness initiatives are insufficient, which may contribute to low participation rates and increased risks of rabies transmission and uncontrolled stray dog populations. This supports existing literature emphasizing that mass dog vaccination combined with sustained public education is the most effective strategy for reducing dog bite incidence and preventing rabies. Similarly, community-based programs rely heavily on regular vaccination drives and effective information dissemination, as lack of awareness remains a major barrier to public participation. Furthermore, weak enforcement of dog registration laws reduces accountability among pet owners, contributing to increased roaming behavior and higher public health risks (Ma et al., 2020).

Indicators	$\bar{x}$	**LoI**	***SD***
Penalties for irresponsible pet ownership are publicly announced.	2.78	M	1.00
Information campaigns on responsible pet ownership are conducted.	2.75	M	0.93
Awareness programs help improve compliance with the ordinance.	2.32	L	0.97
Residents are encouraged to report stray dog cases.	2.27	L	0.95
Educational materials about stray dog control are distributed in barangays.	2.26	L	1.03
Composite	**2.47**	**L**	**0.98**

Table 4 Perceived level of Implementation of the Stray Dog Control Ordinance in Sibulan in Terms of Public Awareness Activities (n=120)

Table 4 shows the perceived level of implementation of the Stray Dog Control Ordinance in Sibulan Municipality in terms of public awareness activities. The results indicate a low level of implementation, with a composite mean of 2.47 (SD = 0.98), suggesting that awareness-related activities are insufficient and inconsistently implemented across barangays. These findings imply that public awareness efforts are not effectively influencing community behavior, limiting their role in promoting responsible pet ownership and ordinance compliance. This reflects the broader principle that awareness programs must be continuous, well-structured, and widely disseminated to produce meaningful behavioral change.

Specifically, the results highlight that public announcement of penalties for irresponsible pet ownership ($\bar{x}$ = 2.78) and the conduct of information campaigns on responsible pet ownership ($\bar{x}$ = 2.75) are implemented to a moderate level. This suggests that some awareness initiatives are present within the municipality; however, they may not be sustained or extensive enough to significantly influence community practices. Such findings indicate partial implementation, where existing efforts are not maximized to achieve widespread awareness and behavioral impact. This is consistent with studies emphasizing that awareness campaigns improve knowledge but have limited effectiveness when they are not continuous and comprehensive (World Health Organization, 2024; Sharma, 2025).

On the other hand, the distribution of educational materials ($\bar{x}$ = 2.26), encouragement of residents to report stray dog cases ($\bar{x}$ = 2.27), and the effectiveness of awareness programs in improving compliance ($\bar{x}$ = 2.32) are implemented to a low level. These results indicate significant gaps in information dissemination, community engagement, and behavioral influence. The

lack of accessible educational materials and limited encouragement for reporting may reduce active participation among residents, weakening the overall effectiveness of the ordinance. These findings support literature suggesting that insufficient public education and weak community involvement reduce compliance with animal control programs, as awareness and participation are essential in promoting responsible pet ownership and reporting behavior (PEP Recommendations, 2018).

Indicators	$\bar{x}$	VI	*SD*
I have seen or heard of road accidents caused by stray dogs in my barangay.	3.71	F	0.75
Stray dogs frequently roam on highways or barangay roads.	3.64	F	0.96
Road users in this area encounter stray dogs while traveling.	3.60	F	0.90
Motorists often swerve or suddenly brake due to stray dogs crossing the road.	3.52	F	0.88
Composite	**3.62**	**F**	**0.87**

Table 5 Frequency of Stray Dog–Related Road Accidents in Sibulan (n=120)

Table 5 shows the frequency of stray dog–related road accidents in Sibulan Municipality as experienced or observed by residents. The results indicate a frequent level of occurrence, with a composite mean of 3.62 (SD = 0.87), suggesting that encounters with stray and free-roaming dogs on roads are commonly experienced within the community. These findings imply that stray dogs pose a continuous risk to road users, negatively affecting overall road safety conditions in the municipality. This reflects the broader concern that unmanaged stray dog populations contribute significantly to traffic hazards and accident risks when not properly controlled (World Health Organization, 2024).

Specifically, the results highlight that having seen or heard of road accidents caused by stray dogs ($\bar{x}$ = 3.71) and the presence of stray dogs roaming on highways or barangay roads ($\bar{x}$ = 3.64) are observed at a frequent level. This suggests that such incidents are widely recognized and commonly experienced within the community, indicating a high level of exposure among residents. Similarly, road users encountering stray dogs while traveling ($\bar{x}$ = 3.60) is also observed at a frequent level, further emphasizing that free-roaming dogs are a regular part of the road environment. These findings are consistent with studies indicating that frequent interaction between road users and stray animals increases the likelihood of road-related risks and unsafe conditions (PEP Recommendations, 2018).

On the other hand, motorists swerving or braking suddenly due to stray dogs ($\bar{x}$ = 3.52) is also observed at a frequent level. This indicates that avoidance behavior is a common response among drivers when encountering stray dogs on the road. These results suggest that sudden maneuvers such as swerving and abrupt braking may increase the risk of accidents, particularly in high-traffic areas. This supports literature suggesting that unpredictable animal movement significantly affects driver behavior and contributes to vehicular accidents (PEP Recommendations, 2018).

Indicators	$\bar{x}$	VI	*SD*
Stray or free-roaming dogs sometimes threaten or chase residents.	3.55	F	0.93
I know someone who has experienced a dog bite incident in this area.	3.50	F	0.95
Dog bite incidents occur in my community.	3.46	F	0.95
Dog bites involving stray dogs have been reported in my barangay.	3.26	S	1.03
Composite	**3.44**	**F**	**0.97**

Table 6 Frequency of Dog Bite Incidence in Sibulan (n=120)

Table 6 shows the frequency of dog bite incidence in Sibulan Municipality as experienced or observed by residents. The results indicate a frequent level of occurrence, with a composite mean of 3.44 (SD = 0.97), suggesting that dog bite incidents are commonly experienced within the community. These findings imply that exposure to risks associated with stray and free-roaming dogs remains high, posing a persistent public health concern in the municipality. This reflects the broader issue that unmanaged dog populations increase the likelihood of human–animal interactions that may result in injuries and potential rabies transmission (World Health Organization, 2024).

Specifically, the results highlight that stray or free-roaming dogs threatening or chasing residents ($\bar{x}$ = 3.55), knowing someone who has experienced a dog bite incident ($\bar{x}$ = 3.50), and the occurrence of dog bite incidents in the community ($\bar{x}$ = 3.46) are observed at a frequent level. This suggests that aggressive or uncontrolled dog behavior is commonly encountered, increasing the risk of bite incidents among residents. These findings are consistent with studies indicating that frequent interaction between humans and free-roaming dogs increases the likelihood of dog bites and related injuries (World Health Organization, 2024, National Rabies Prevention and Control Program Strategic Plan, 2025).

On the other hand, reported dog bites involving stray dogs in the barangay ($\bar{x}$ = 3.26) are observed at a sometimes level. This indicates that although dog bite incidents occur frequently, not all cases are formally reported. These results indicate gaps in reporting systems, awareness, and access to proper reporting channels. The lack of consistent reporting may limit effective monitoring and intervention efforts, allowing risks to persist within the community. This supports literature suggesting that underreporting of dog bite incidents is common in areas with weak surveillance systems and limited public awareness (Ma et al., 2020; World Health Organization, 2024).

Implementation	*rs*	*p*	Decision	Remark
Enforcement	-.118	.198	Fail to Reject H_0	Not Significant
Impounding	-.162	.077	Fail to Reject H_0	Not Significant
REG. & VAC. Awareness	-.213	.020	Reject H_0	Significant
Public Awareness	-.195	.033	Reject H_0	Significant

Table 7 Relationship between the level of Implementation of the Stray Dog Control Ordinance and Stray dog –related Road accidents (n=120)

Table 7 shows the relationship between the level of implementation of the Stray Dog Control Ordinance and the frequency of stray dog–related road accidents in Sibulan Municipality. The results indicate that enforcement (rs = −.118, p = .198) and impounding (rs = −.162, p = .077) have no significant relationship with stray dog–related road accidents, as their p-values exceed the 0.05 level of significance. These findings imply that enforcement and impounding, in their current state, do not significantly influence the reduction of road accidents. This suggests that weak and inconsistent implementation, along with limited variability in responses, reduces the effectiveness of these components in producing observable safety outcomes. Specifically, the results highlight that registration and vaccination awareness (rs = −.213, p = .020) and public awareness (rs = −.195, p = .033) show a significant negative relationship with stray dog–related road accidents. This indicates that as the level of awareness-related implementation increases, the frequency of road accidents tends to decrease. Although the relationships are weak, they are statistically significant, suggesting that awareness-related efforts contribute to safer community behavior and reduced exposure to stray dog–related road risks.

On the other hand, the absence of significant relationships for enforcement and impounding can be further explained by the nature of Spearman's rho. Spearman's rho did not detect a significant relationship for these variables mainly because the strength of association is weak and not consistent enough in the data. It measures how well two variables move together in a monotonic pattern (consistently increasing or decreasing). When most respondents provide similar (low) ratings, there is less variability in the data, making it difficult to detect a clear pattern and achieve statistical significance. In addition, road accidents are influenced by multiple external factors such as driver behavior, road conditions, and traffic flow, which may further weaken the observable relationship between ordinance implementation and accident occurrence. Despite this, the negative direction of the correlations suggests a potential trend where improvements in enforcement and impounding may still contribute to reduced road accidents over time (Schober et al., 2018).

These findings imply that behavioral factors, particularly awareness and education, may have a more immediate influence on road safety outcomes compared to enforcement and impounding under conditions of weak implementation. Increasing public awareness may encourage responsible pet ownership, reduce roaming behavior, and promote safer interactions between road users and animals. This is consistent with the National Rabies Prevention and Control Program Strategic Plan (2025), which emphasizes that public awareness and responsible pet ownership are essential in reducing free-roaming populations and minimizing their impact on public spaces, including roads. Similarly, the World Health Organization (2024) highlights that community education and engagement significantly enhance the effectiveness of dog control programs, as informed individuals are more likely to comply with regulations and adopt preventive practices. Moreover, awareness-based interventions have been shown to influence behavior and reduce risks associated with stray dogs, even when enforcement mechanisms are limited (Ma et al., 2020). Conversely, the lack of significant relationships for enforcement and impounding supports the idea that weak or inconsistent implementation reduces the effectiveness of policy measures, making their impact less observable (Pressman et al., 2024; World Health Organization, 2024).

Implementation	*rs*	*p*	Decision	Remark
Enforcement	-.124	.177	Fail to Reject H_0	Not Significant
Impounding	-.225	.013	Reject H_0	Significant
REG. & VAC. Awareness	-.268	.003	Reject H_0	Significant
Public Awareness	-.113	.221	Fail to Reject H_0	Not Significant

Table 8 Relationship Between the level of Implementation of the Stray Dog Control Ordinance and Dog Bite Incidence (n=120)

Table 8 shows the relationship between the level of implementation of the Stray Dog Control Ordinance and dog bite incidence in Sibulan Municipality. The results indicate that enforcement ($r_s = -.124$, $p = .177$) and public awareness ($r_s = -.113$, $p = .221$) have no significant relationship with dog bite incidence, as their p-values exceed the 0.05 level of significance. These findings imply that enforcement and public awareness, in their current state, do not significantly influence the occurrence of dog bite cases. This suggests that weak and inconsistent implementation of these components limits their effectiveness in producing measurable public health outcomes.

Specifically, the results highlight that impounding ($r_s = -.225$, $p = .013$) and registration and vaccination awareness ($r_s = -.268$, $p = .003$) show a significant negative relationship with dog bite incidence. This indicates that as the level of implementation of these components increases the frequency of dog bite cases tends to decrease. Although the relationships are weak, they are statistically significant, suggesting that these components contribute to reducing dog bite risks within the community.

On the other hand, the absence of significant relationships for enforcement and public awareness may be explained by the same reasoning discussed in Table 7 regarding the nature of Spearman's rho. The weak and less consistent variation in responses may limit the ability to detect a significant relationship. Despite this, the negative direction of the correlations suggests a potential trend where improvements in these components may still contribute to reducing dog bite incidence over time (Schober et al., 2018).

These findings imply that direct population control measures, such as impounding, along with preventive strategies like vaccination and registration, have a more immediate effect on reducing dog bite incidents compared to enforcement and awareness alone, particularly when the latter are weakly implemented. Reducing the number of free-roaming dogs and ensuring proper vaccination and registration may help minimize aggressive encounters and reduce the risk of rabies transmission.

These results are consistent with the National Rabies Prevention and Control Program Strategic Plan (2025), which emphasizes that dog population control measures, including impounding, vaccination, and registration, are essential in reducing risks associated with free-roaming dogs, including bite incidents. Similarly, studies indicate that integrated dog population management programs can lead to measurable reductions in dog bite cases when consistently implemented (World Health Organization, 2024; Lapiz et al., 2012). Furthermore, reducing the number of free-roaming dogs through active control measures directly decreases the frequency of human–dog interactions that may result in bite incidents (Ma et al., 2020).

Conclusion and Recommendations

The findings of the study, as perceived by the respondents, indicate that the Stray Dog Control Ordinance in Sibulan Municipality is not effectively implemented, particularly in terms of enforcement and operational execution. The low level of implementation across key areas contributes to the continued presence of stray dogs, which in turn leads to frequent road accidents and dog bite incidents. The study further concludes that awareness-based interventions, such as registration and vaccination campaigns, play a significant role in reducing road accidents, while direct control measures such as impounding and vaccination contribute to the reduction of dog bite cases. However, the effectiveness of these measures is limited by weak enforcement and inconsistent implementation. Therefore, both behavioral approaches (awareness and education) and structural approaches (enforcement and impounding) are necessary to improve the overall effectiveness of the ordinance and ensure better public safety outcomes.

Based on the findings of the study, which revealed low implementation levels across key areas and frequent stray dog–related accidents and dog bite incidents, the following recommendations are proposed:
Strengthening enforcement mechanisms:
1.Assign dedicated animal control personnel to each barangay.
2.Implement regular monitoring and inspection schedules.
3.Enforce consistent penalties for violations.

Effective enforcement is essential in ensuring compliance with animal control laws. Legislation alone is insufficient without consistent enforcement, as weak implementation reduces its effectiveness in controlling stray dog populations National Rabies Prevention and Control Program Strategic Plan, 2025).

Improvement of impounding operations:
1.Establish adequate animal shelters and transport facilities.
2.Conduct regular impounding operations, especially in high-risk areas.
3.Ensure humane handling and standardized procedures.

Effective dog population control requires functional impounding systems, proper facilities, and trained personnel to ensure humane and sustainable outcomes (National Rabies Prevention and Control Program Strategic Plan, 2025).

Enhancement of registration and vaccination programs:
1.Conduct regular anti-rabies vaccination campaigns.
2.Strengthen dog registration systems and monitoring.
3.Provide accessible or subsidized vaccination services.

The World Health Organization states that mass dog vaccination is the most effective strategy for preventing rabies and reducing dog bite incidence, particularly in areas with free-roaming dogs (WHO, 2024). Similarly, the Department of Health Philippines highlights that community-based vaccination and registration programs are critical in reducing rabies cases in the Philippines.

Expansion of public awareness campaigns:
1.Conduct continuous education on responsible pet ownership.
2.Distribute educational materials in barangays.
3.Promote community reporting of stray dogs.

Public awareness is a key component of successful dog control programs. The World Health Organization emphasizes that community education improves compliance and promotes responsible ownership, thereby reducing stray dog populations and related risks (WHO, 2025).

Integration of road safety and public health measures:
1.Monitor areas with frequent stray dog–related accidents.
2.Install warning signages in high-risk zones.
3.Integrate animal control with traffic safety programs.

Uncontrolled dog populations pose risks not only to health but also to public safety, including road hazards, reinforcing the need for integrated interventions (National Rabies Prevention and Control Program Strategic Plan, 2025).

Strengthening monitoring and evaluation systems:
1.Develop a database for dog bite cases and road accidents.
2.Conduct regular evaluation of ordinance implementation.
3.Use data for evidence-based policy improvement.

Effective monitoring systems are essential for program success. Studies such as Totton et al. (2010) emphasize that continuous monitoring and evaluation are necessary to assess the impact of dog population management programs and improve their effectiveness over time.

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Data Availability Statement

The authors declare that they have no known financial or personal conflicts of interest that could have influenced the conduct or outcomes of this study.

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Appendices

No appendices are attached to this study.