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Awareness, Compliance, and Enforcement of Traffic Laws Rules and Regulations Towards an Intervention Program

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Abstract

This study assessed the awareness, compliance, and enforcement of traffic regulations by licensed drivers and traffic enforcers in the cities of Dapitan and Dipolog, Zamboanga del Norte. This study was anchored on the Theory of Planned Behavior, Deterrence Theory, and Broken Windows Theory. This employed a quantitative, descriptive-correlation approach where 879 respondents (755 drivers and 124 enforcers) were utilized, and were selected using a stratified random sampling approach. Data collection used questionnaires, while descriptive, comparative, and correlational analyses were used to report the findings. Overall, the respondents demonstrated strong awareness of the traffic rules, but only moderate awareness of regulations pertaining to legal parking and special laws (e.g. Anti-Distracted Driving Act). Traffic enforcers consistently outperformed drivers. The compliance was moderate, with the strongest compliance demonstrated by obeying traffic control devices, and the weakest compliance with parking and special laws. Perceived traffic law enforcement was moderate, and was attributed to the limited manpower and resources to enforce the laws, and the presence of petty corruption and enforcement inconsistences. Given the significant positive correlation between awareness, compliance, and enforcement, it is clear that the lack of knowledge and strong enforcement of laws reduces road safety. The study demonstrated that awareness does not equate to compliance and that it must be coupled with additional enforcement to increase the overall effectiveness. Public education, mandatory drivers' education, technology-based traffic law enforcement, increased training and education of traffic enforcers, and community-based initiatives directed to public law compliance and safety will all be beneficial to the Zamboanga del Norte area.

Keywords: Traffic laws, awareness, compliance, enforcement, road safety, intervention program, Philippines

Introduction

Road traffic safety constitutes a complex and persistent global public health challenge, shaped not only by infrastructural and technological conditions but also by behavioral, institutional, and cultural dynamics. Despite the existence of comprehensive traffic laws, non-compliance remains a dominant contributor to road traffic injuries and fatalities, particularly in low- and middle-income countries where enforcement systems are often fragmented and under-resourced. The World Health Organization has consistently emphasized that human behavior—rather than infrastructure alone—accounts for the majority of road crashes, underscoring the centrality of motorists' awareness, compliance, and

responsiveness to enforcement mechanisms. In the Philippine context, this challenge is further compounded by rapid urbanization, increasing motorization, and uneven governance capacities, resulting in persistent gaps between regulatory frameworks and actual road user behavior (Philippine Statistics Authority [PSA], 2023; National Economic and Development Authority [NEDA], 2023). These conditions highlight that traffic safety is not merely a legal issue but a multidimensional governance problem requiring integrated behavioral and institutional analysis.

Existing scholarship has extensively examined the individual components of traffic behavior—awareness, compliance, and enforcement—yet often in isolation rather than as interdependent constructs. Studies grounded in the Theory of Planned Behavior suggest that awareness influences attitudes and intentions but does not necessarily guarantee compliance in the absence of enabling conditions such as perceived behavioral control and normative pressure (Ajzen, 1991). Empirical research further demonstrates that motorists frequently possess adequate knowledge of traffic rules but engage in selective compliance due to convenience, time pressure, or perceived impunity (Ramos, 2022; Soriano, 2021). From an enforcement perspective, Deterrence Theory posits that compliance is contingent upon the perceived certainty, severity, and swiftness of sanctions; however, evidence indicates that inconsistent enforcement and administrative inefficiencies weaken this deterrent effect (Ncube, 2023; Perez, 2021). Complementing this, the Broken Windows Theory highlights how tolerance of minor infractions—such as illegal parking or failure to yield—can normalize broader patterns of non-compliance, thereby eroding the overall regulatory environment (Wilson & Kelling, 1982). Collectively, these theoretical and empirical perspectives suggest that traffic law adherence is best understood as a dynamic interplay between cognition, behavior, and institutional practice.

Notwithstanding these contributions, a critical gap persists in the literature, particularly within the Philippine and broader Southeast Asian context. Much of the existing research focuses either on urban centers such as Metro Manila or on single-variable analyses, neglecting the nuanced interactions among awareness, compliance, and enforcement in smaller or emerging urban settings. Furthermore, there remains limited empirical investigation into the perceptual discrepancies between key stakeholder groups—specifically licensed drivers and traffic enforcers—which may significantly influence both compliance behavior and institutional trust. Studies have also tended to privilege macro-level analyses or policy evaluations, with insufficient attention to localized behavioral patterns shaped by cultural norms, informal transport systems, and resource constraints (Villamor & Asis, 2020; Salcedo, 2023). This gap is particularly salient in areas such as Dapitan and Dipolog Cities, where semi-urban and urban dynamics intersect, and where traffic governance is influenced by both formal enforcement structures and community-level practices.

In response to these gaps, the present study advances a more integrative and context-sensitive analysis by examining the interrelationships among awareness, compliance, and enforcement of traffic laws within Dapitan and Dipolog Cities, Zamboanga del Norte. By employing a quantitative correlational design and incorporating both motorists and enforcers as respondents, the study not only captures behavioral patterns but also interrogates perceptual divergences that may underlie enforcement challenges. Its significance lies in its capacity to bridge theoretical insights with localized empirical evidence, thereby contributing to a more nuanced understanding of traffic governance in developing contexts. Moreover, by situating its findings within national development priorities and global road safety frameworks, the study provides a robust basis for designing evidence-based intervention programs that integrate education, enforcement, and technological innovation. In doing so, it moves beyond

descriptive analysis toward actionable knowledge, addressing both the structural and behavioral determinants of road safety.

Theoretical Framework

This study is anchored on three complementary theoretical perspectives that collectively explain the behavioral and institutional dynamics underlying traffic law adherence: the Theory of Planned Behavior (Ajzen, 1991), Deterrence Theory (Beccaria, 1764), and Broken Windows Theory (Wilson & Kelling, 1982). These frameworks provide an integrated lens through which awareness, compliance, and enforcement are conceptualized not as isolated constructs but as interdependent dimensions of traffic governance. By synthesizing psychological, legal, and sociological perspectives, the framework allows for a more comprehensive understanding of how knowledge, behavioral intentions, and enforcement environments interact to shape motorists' conduct.

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), posits that human behavior is primarily determined by behavioral intentions, which are influenced by three key factors: attitudes, subjective norms, and perceived behavioral control. Within the context of traffic law compliance, awareness of traffic rules contributes to the formation of attitudes toward lawful driving, while social influences—such as peer behavior and community norms—shape subjective norms. Perceived behavioral control reflects the individual's assessment of their ability to comply with traffic regulations, which may be influenced by environmental conditions such as road infrastructure, traffic congestion, and enforcement presence. TPB thus provides a critical explanation for why high awareness does not necessarily translate into compliance, as behavioral execution depends on the interplay of cognitive, social, and situational factors.

Complementing this behavioral perspective, Deterrence Theory, originally articulated by Cesare Beccaria (1764), provides a legal and enforcement-oriented explanation of compliance. The theory asserts that individuals are more likely to obey laws when they perceive punishment to be certain, swift, and proportionate. In traffic contexts, this implies that the visibility and consistency of enforcement—such as checkpoints, apprehensions, and automated monitoring systems—significantly influence motorists' decision-making processes. When enforcement is perceived as weak, inconsistent, or corrupt, the deterrent effect diminishes, leading to higher rates of non-compliance. Deterrence Theory therefore underscores the critical role of institutional credibility and enforcement efficiency in shaping lawful behavior on the road.

The Broken Windows Theory, proposed by Wilson and Kelling (1982), introduces a sociological dimension by emphasizing the impact of environmental order and social signals on behavior. The theory suggests that visible signs of disorder—such as unregulated parking, jaywalking, or minor traffic violations—create an environment that implicitly tolerates rule-breaking, thereby encouraging more serious infractions. In traffic systems, the failure to address minor violations can normalize non-compliance and erode respect for traffic laws. Conversely, consistent enforcement of even minor rules reinforces a culture of discipline and accountability. This perspective is particularly relevant in contexts where informal practices and cultural tolerance of minor violations are prevalent, as it highlights the importance of maintaining visible order to sustain broader regulatory compliance.

Taken together, these three theories establish a coherent and multidimensional framework for understanding traffic law adherence. The Theory of Planned Behavior explains the cognitive and motivational foundations of compliance, Deterrence Theory highlights the role of enforcement in

shaping behavioral choices, and Broken Windows Theory underscores the influence of environmental and social cues in sustaining or undermining lawful conduct. Their integration provides a robust theoretical basis for analyzing the relationships among awareness, compliance, and enforcement, and for informing the design of intervention strategies that address not only knowledge gaps but also enforcement consistency and socio-cultural dynamics.

Methodology

Research Design

This study employed a quantitative descriptive–correlational research design to examine the levels and interrelationships of awareness, compliance, and enforcement of traffic laws among respondents. The design was appropriate as it enabled the investigation of naturally occurring variables without manipulation, while also allowing for the identification of patterns, differences, and associations among key constructs. Specifically, the study sought to determine whether variations in awareness are associated with differences in compliance and perceived enforcement, as well as whether significant differences exist between licensed drivers and traffic enforcers. The design is particularly suitable for policy-oriented research, as it provides empirical evidence grounded in real-world conditions rather than experimental control.

Research Locale and Participants

The study was conducted in Dapitan City and Dipolog City, Zamboanga del Norte, Philippines, two localities selected due to their distinct yet complementary traffic environments. Dapitan City represents a semi-urban context characterized by moderate traffic flow and limited enforcement resources, while Dipolog City reflects a more urbanized setting with higher vehicular density and structured traffic management systems. The participants consisted of 879 respondents, including 755 licensed drivers and 124 traffic enforcers, selected through stratified random sampling to ensure proportional representation across demographic and occupational groups. Inclusion criteria required drivers to possess a valid license and actively operate vehicles within the study areas, while enforcers were required to be directly engaged in traffic management duties. This sampling approach ensured that both perspectives—motorists and enforcement authorities—were adequately represented.

Research Instrument

Data were collected using a structured survey questionnaire designed to measure respondents' socio-demographic profile, level of awareness, level of compliance, and perceptions of enforcement of traffic laws. The instrument consisted of multiple Likert-scale items organized into distinct domains corresponding to key traffic regulations such as speed limits, right of way, parking rules, and special traffic laws. Content validity was established through expert evaluation by specialists in criminology, traffic management, and research methodology, ensuring conceptual clarity and relevance. Prior to full implementation, the instrument underwent pilot testing, yielding a Cronbach's alpha coefficient of 0.934, which indicates excellent internal consistency and reliability. The high reliability score confirms that the instrument consistently measures the constructs under investigation.

Data Collection Procedure

Prior to data collection, formal permission was secured from relevant local government units and traffic management authorities. Ethical protocols were strictly observed, including the administration of

informed consent, assurance of voluntary participation, and protection of respondents' anonymity and confidentiality. Data were collected using a combination of face-to-face and online survey administration. For in-person data collection, trained data collectors distributed and supervised the completion of questionnaires in designated areas such as terminals, parking zones, and public spaces. For online data collection, a secure survey platform was utilized, with distribution facilitated through digital communication channels. All completed questionnaires were reviewed for completeness and accuracy, after which responses were encoded, validated, and prepared for statistical analysis.

Statistical Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, particularly median and interquartile range (IQR), were used to determine the levels of awareness, compliance, and enforcement, consistent with the ordinal nature of Likert-scale data. To examine differences between licensed drivers and traffic enforcers, the Mann–Whitney U test was employed as a non-parametric alternative suitable for independent samples. To assess the relationships among awareness, compliance, and enforcement, Spearman's rho correlation coefficient was utilized to determine the strength and direction of associations. All statistical analyses were conducted at a 0.05 level of significance, ensuring methodological rigor in identifying meaningful differences and relationships.

Results

This study presents the results of data collected from licensed drivers and traffic enforcers regarding their levels of awareness, compliance, and perceived enforcement of traffic laws, rules, and regulations. The findings are organized in accordance with the research questions, focusing on descriptive levels, group differences, and relationships among key variables.

Table 1. Level of Awareness of Traffic Laws, Rules, and Regulations

Domain	Median (IQR)	Interpretation
Speed limits	3.23 (3.0-2.6)	High
Overtaking/passing	3.11 (2.8 – 3.4)	High
Right of way	3.18 (2.9 – 3.5)	High
Starting/stopping/turning	3.05 (2.8- 3.3)	High
Parking	2.92 (2.6 – 3.2)	Moderate
Vehicle accessories	3.07 (2.8 – 3.4)	High
Traffic signs	3.26 (3.0- 3.6)	High
Pavement markings	3.14 (2.9- 3.4)	High
Special traffic laws	2.78 (2.5 – 3.1)	Moderate

The table shows that respondents generally had a high level of awareness of traffic laws, rules, and regulations, as reflected in median scores ranging from 2.78 to 3.26. The highest awareness was recorded in traffic signs (Mdn = 3.26, IQR = 3.0–3.6) and speed limits (Mdn = 3.23, IQR = 3.0–3.6), indicating that respondents were most familiar with highly visible and commonly encountered traffic rules. High awareness was also observed in right of way, pavement markings, overtaking/passing, required motor vehicle accessories, and starting, stopping, and turning, suggesting that respondents

possessed broad knowledge of basic road regulations. In contrast, parking (Mdn = 2.92, IQR = 2.6–3.2) and special traffic laws (Mdn = 2.78, IQR = 2.5–3.1) obtained only moderate ratings, indicating relatively lower awareness in these more specific or technical areas. Overall, the results suggest that respondents were more knowledgeable about routine and visible traffic rules than about specialized legal provisions.

Table 2. Difference in Awareness Between Licensed Drivers and Traffic Enforcers

Domain	z	p	Effect Size (r)	Interpretation
Speed limits	-3.21	.001	.18	Enforcer higher
Overtaking/passing	-2.42	.015	.14	Enforcer higher
Right of way	-3.56	<.001	.20	Enforcer higher
Parking	−1.60	.110	.09	Not significant
Traffic signs	−3.78	<.001	.21	Enforcers higher
Special traffic laws	−4.02	<.001	.23	Enforcers higher

Table 2 presents the Mann–Whitney U test results comparing the awareness levels of licensed drivers and traffic enforcers. The findings indicate that traffic enforcers had significantly higher awareness than licensed drivers in most of the measured domains. Significant differences were found in speed limits ($z = -3.21$, $p = .001$, $r = .18$), overtaking/passing ($z = -2.42$, $p = .015$, $r = .14$), right of way ($z = -3.56$, $p < .001$, $r = .20$), traffic signs ($z = -3.78$, $p < .001$, $r = .21$), and special traffic laws ($z = -4.02$, $p < .001$, $r = .23$). These results show that enforcers consistently demonstrated better knowledge in both basic and technical areas of traffic regulation. The largest difference was found in special traffic laws, suggesting that the greatest knowledge gap between the two groups lies in more specialized legal provisions. In contrast, parking rules did not show a significant difference ($z = -1.60$, $p = .110$, $r = .09$), indicating that both groups had relatively comparable awareness in this domain. Overall, the results point to a clear pattern in which traffic enforcers possess a higher level of awareness than licensed drivers across most traffic law categories.

Table 3. Level of Compliance with Traffic Laws, Rules, and Regulations

Domain	Median (IQR)	Interpretation
Speed limits	2.94 (2.6–3.2)	Moderate
Overtaking/passing	2.88 (2.5–3.1)	Moderate
Right of way	2.97 (2.7–3.2)	Moderate
Parking	2.67 (2.3–2.9)	Moderate
Traffic signs	3.00 (2.8–3.3)	High
Special traffic laws	2.54 (2.2–2.8)	Moderate

Table 3 shows that respondents exhibited a generally moderate level of compliance with traffic laws, with median scores ranging from 2.54 to 3.00. Among the domains, traffic signs obtained the highest score (Mdn = 3.00, IQR = 2.8–3.3), indicating that respondents were more likely to comply with rules that are clearly visible and immediately encountered on the road. The remaining domains, including speed limits, overtaking/passing, right of way, parking, and special traffic laws, all fell within the moderate range. The lowest level of compliance was observed in special traffic laws (Mdn = 2.54, IQR

= 2.2–2.8), followed by parking (Mdn = 2.67, IQR = 2.3–2.9), suggesting that respondents were less consistent in following technical, ordinance-based, or situation-specific regulations. Overall, the results indicate that while respondents were somewhat compliant with traffic laws, consistent adherence was stronger for visible and familiar rules than for specialized legal requirements.

Table 4. Difference in Compliance Between Licensed Drivers and Traffic Enforcers

Domain	z	p	Effect Size (r)	Interpretation
Overtaking/passing	−2.36	.018	.13	Enforcer higher
Right of way	−2.01	.044	.11	Enforcer higher
Parking	−2.88	.004	.16	Enforcer higher
Special traffic laws	−3.45	.001	.19	Enforcers higher
Others	−0.52	>.05	—	Not significant

The results show the differences in compliance between licensed drivers and traffic enforcers. The results show that traffic enforcers reported significantly higher compliance than licensed drivers in several domains. Significant differences were noted in overtaking/passing ($z = -2.36$, $p = .018$, $r = .13$), right of way ($z = -2.01$, $p = .044$, $r = .11$), parking ($z = -2.88$, $p = .004$, $r = .16$), and special traffic laws ($z = -3.45$, $p = .001$, $r = .19$). These findings suggest that enforcers were generally more likely to follow traffic regulations than licensed drivers, particularly in procedural and technical areas. The strongest difference was found in special traffic laws, again indicating that this domain separates the two groups most clearly. Meanwhile, the category labeled others showed no significant difference ($z = -0.52$, $p > .05$), suggesting similar levels of compliance between groups in that area. Taken together, the results indicate that traffic enforcers not only know more about traffic laws but also report practicing them more consistently than licensed drivers.

Table 5. Perceived Level of Enforcement of Traffic Laws, Rules, and Regulations

Domain	Median (IQR)	Interpretation
Speed limits	2.41 (2.1–2.7)	Moderate
Overtaking/passing	2.38 (2.1–2.6)	Moderate
Right of way	2.47 (2.2–2.7)	Moderate
Parking	2.52 (2.3–2.8)	Moderate
Required accessories	2.33 (2.1–2.6)	Moderate
Traffic signs	2.50 (2.3–2.8)	Moderate
Pavement markings	2.46 (2.2–2.7)	Moderate
Special traffic laws	2.28 (2.0–2.5)	Lower- Moderate

Table 5 indicates that respondents perceived the enforcement of traffic laws as generally moderate across all domains. Median values ranged from 2.28 to 2.52, showing that enforcement was viewed as present but not particularly strong or highly consistent. The highest perceived enforcement was found in parking (Mdn = 2.52, IQR = 2.3–2.8) and traffic signs (Mdn = 2.50, IQR = 2.3–2.8), suggesting that respondents were more likely to notice enforcement in areas involving visible and easily observable violations. Moderate ratings were also reported for right of way, pavement markings, speed, overtaking/passing, and required accessories. The lowest perceived enforcement was observed in special

traffic laws (Mdn = 2.28, IQR = 2.0–2.5), indicating that respondents regarded the implementation of specialized traffic regulations as less evident or less consistent. Overall, the findings suggest that enforcement was viewed as more noticeable in common and visible traffic situations, but weaker in more technical areas of regulation.

Table 6. Difference in Enforcement Perceptions Between Licensed Drivers and Traffic Enforcers

Domain	z	p	Effect Size (r)	Interpretation
Speed limits	−4.10	<.001	.23	Enforcer higher
Overtaking/passing	−3.76	<.001	.21	Enforcer higher
Parking	−2.94	.003	.16	Enforcer higher
Special traffic laws	−4.48	<.001	.25	Enforcers higher
Others	−2.2 to −3.5	.001–.027	.12–.19	Enforcers higher

Table 6 shows that traffic enforcers consistently perceived higher levels of enforcement than licensed drivers across all measured domains. Significant differences were found in speed ($z = -4.10$, $p < .001$, $r = .23$), overtaking/passing ($z = -3.76$, $p < .001$, $r = .21$), parking ($z = -2.94$, $p = .003$, $r = .16$), and special traffic laws ($z = -4.48$, $p < .001$, $r = .25$), as well as in the remaining domains grouped under others ($z = -2.2$ to -3.5, $p = .001–.027$, $r = .12–.19$). These results indicate that enforcers generally viewed traffic law implementation as stronger and more visible than drivers did. The largest difference was found in special traffic laws, followed by speed enforcement, suggesting that enforcers and drivers differed most in how they viewed the enforcement of technical and safety-related regulations. Overall, the findings reveal a consistent perceptual gap between the two groups, with enforcers reporting more positive assessments of enforcement than licensed drivers.

Table 7. Relationship Between Awareness and Compliance

Domain	p	p	Strength	Interpretation
Awareness ↔ Compliance	.46	<.001	Moderate	Positive relationship

Table 7 presents the correlation between awareness and compliance. The results show a moderate positive relationship between the two variables ($\rho = .46$, $p < .001$), indicating that respondents with higher levels of awareness also tended to report higher levels of compliance with traffic laws. This means that knowledge of traffic laws was associated with better adherence, although the relationship was not strong enough to suggest that awareness alone fully explains compliance behavior. The moderate strength of the correlation implies that other factors may also influence whether respondents follow traffic regulations. Nonetheless, the result confirms that awareness is an important factor associated with compliance.

Table 8. Relationship Between Awareness and Enforcement

Domain	p	p	Strength	Interpretation
Awareness ↔ Enforcement	.31	<.001	Weak-Moderate	Positive relationship

The result shows a weak to moderate positive relationship between awareness and enforcement ($\rho = .31$, $p < .001$). This indicates that respondents with higher awareness of traffic laws also tended to report

slightly higher perceptions of enforcement. However, the relatively lower correlation coefficient suggests that the relationship was not particularly strong. In other words, while awareness may contribute to how respondents perceive enforcement, it does not appear to be a major determinant of those perceptions. The findings imply that respondents can distinguish between knowing traffic laws and actually observing their implementation in practice.

Table 9. Relationship Between Compliance and Enforcement

Domain	p	p	Strength	Interpretation
Compliance ↔ Enforcement	.52	<.001	Moderate-Strong	Positive relationship

Table 9 reveals a moderate to strong positive relationship between compliance and enforcement ($\rho = .52$, $p < .001$). This indicates that respondents who perceived stronger enforcement also tended to report higher compliance with traffic laws. Among the three relationships tested, this was the strongest, suggesting that enforcement had the closest association with actual rule-following behavior. The finding implies that compliance is more strongly linked to the visibility or perceived consistency of enforcement than to awareness alone. Overall, the results highlight the importance of enforcement as a factor associated with improved adherence to traffic laws.

Discussion

The findings of this study reveal a nuanced but critical disjunction between awareness and actual behavioral compliance with traffic laws, reinforcing long-standing theoretical and empirical insights in traffic safety research. While respondents demonstrated generally high awareness of fundamental traffic rules—particularly those that are highly visible and routinely encountered—this cognitive familiarity did not consistently translate into compliant behavior. This pattern aligns with the Theory of Planned Behavior (Ajzen, 1991), which posits that awareness or knowledge alone is insufficient to produce behavioral change unless supported by favorable attitudes, strong subjective norms, and high perceived behavioral control. In the context of Dapitan and Dipolog Cities, it is plausible that despite adequate knowledge, motorists' compliance is mediated by situational constraints such as traffic congestion, perceived inconvenience, and weak normative pressures, thereby limiting the behavioral impact of awareness.

The persistence of moderate compliance levels, particularly in domains such as parking and special traffic laws, further underscores the role of contextual and cultural factors in shaping traffic behavior. The findings suggest that certain violations have become normalized within the local driving culture, reflecting what the Broken Windows Theory (Wilson & Kelling, 1982) conceptualizes as the gradual institutionalization of disorder. When minor infractions—such as improper parking or non-adherence to specialized regulations—are routinely tolerated or inconsistently sanctioned, they signal permissiveness within the system, thereby encouraging broader patterns of non-compliance. This normalization is especially evident in areas where enforcement visibility is limited, reinforcing the idea that behavioral adherence is not solely an individual decision but a socially conditioned response shaped by collective practices and environmental cues.

The most salient finding of the study is the strong positive relationship between compliance and enforcement, which provides robust empirical support for Deterrence Theory (Beccaria, 1764). The results indicate that enforcement—particularly when perceived as visible, consistent, and credible—

serves as the most influential determinant of compliance behavior. This suggests that motorists are more responsive to external regulatory pressures than to internalized knowledge alone. The relatively weaker relationship between awareness and enforcement further highlights a critical perceptual gap: while individuals may understand traffic laws, their perception of enforcement effectiveness depends on observable institutional actions rather than abstract knowledge. This finding is consistent with prior research emphasizing that the perceived certainty of punishment, rather than its severity, is the most effective driver of compliance (Ncube, 2023; Perez, 2021). In settings where enforcement is perceived as inconsistent or selective, the deterrent effect diminishes, thereby weakening compliance regardless of awareness levels.

The observed differences between licensed drivers and traffic enforcers further illuminate the interplay between knowledge, role, and behavior. Traffic enforcers demonstrated significantly higher levels of both awareness and compliance, suggesting that professional training, institutional accountability, and direct engagement with enforcement processes enhance both cognitive and behavioral adherence. However, this divergence also reveals a critical asymmetry in the traffic system: while enforcers operate within a structured regulatory framework, drivers are embedded in a more fluid and socially influenced environment where compliance is negotiated rather than strictly observed. This disparity may contribute to the perception gap in enforcement identified in the study, wherein enforcers perceive enforcement as more consistent than drivers do. Such discrepancies highlight the importance of transparency, standardization, and public visibility in enforcement practices to align institutional intent with public perception.

Taken together, the findings suggest that traffic law compliance is best understood as a function of interacting cognitive, behavioral, and institutional factors rather than as a direct outcome of awareness alone. While awareness remains a necessary precondition for compliance, it is enforcement—particularly its visibility, consistency, and perceived fairness—that ultimately determines behavioral outcomes. This underscores the need for integrated interventions that move beyond information dissemination toward strengthening enforcement mechanisms and reshaping social norms. In the context of Dapitan and Dipolog Cities, such interventions must account for local realities, including resource constraints, cultural practices, and governance structures, to ensure that traffic regulations are not only understood but consistently practiced.

Conclusion

This study provides empirical evidence that, within the context of Dapitan and Dipolog Cities, awareness of traffic laws is generally well established but does not, in itself, ensure consistent compliance. The findings demonstrate that while motorists possess adequate knowledge of fundamental traffic regulations, adherence remains moderate, particularly in areas involving specialized or less visible laws. This indicates a critical gap between cognitive understanding and actual behavioral practice, reinforcing the notion that knowledge alone is insufficient to drive sustained compliance.

More importantly, the study establishes that enforcement is the most influential determinant of compliance behavior. The strong relationship between compliance and enforcement underscores the central role of visible, consistent, and credible regulatory mechanisms in shaping motorists' actions. In contrast, the relatively weaker association between awareness and enforcement suggests that perceptions of enforcement are grounded more in lived experiences and observable practices than in abstract knowledge of the law. The identified perception gap between drivers and traffic enforcers further

highlights inconsistencies in enforcement visibility and public trust, which may undermine the overall effectiveness of traffic governance.

The study also reveals structural and behavioral asymmetries within the traffic system. Traffic enforcers, by virtue of their professional roles and institutional exposure, exhibit higher levels of both awareness and compliance compared to licensed drivers. This disparity reflects broader systemic dynamics in which drivers operate within socially negotiated norms, while enforcers function within formal regulatory frameworks. Such differences emphasize the need for bridging institutional practices and public behavior through more transparent, standardized, and community-oriented enforcement strategies.

Overall, the findings affirm that traffic law compliance is a multidimensional phenomenon shaped by the interaction of awareness, enforcement, and socio-cultural context. Effective traffic governance, therefore, requires an integrated approach that not only strengthens public education but also enhances enforcement consistency, institutional credibility, and normative alignment. By situating these insights within a localized context, this study contributes to a more nuanced understanding of road safety challenges in developing settings and provides a robust empirical foundation for designing targeted, evidence-based intervention programs aimed at fostering safer and more disciplined road environments.

Recommendations

Based on the findings of the study, a set of strategic and evidence-based recommendations is proposed to enhance traffic law awareness, compliance, and enforcement in Dapitan and Dipolog Cities.

First, targeted and sustained public education initiatives should be institutionalized, particularly focusing on domains with moderate awareness such as parking regulations and special traffic laws. These campaigns must move beyond generic information dissemination and adopt context-sensitive, behavior-oriented approaches, utilizing schools, barangay assemblies, digital platforms, and transport groups. Integrating traffic education into formal and informal learning systems can strengthen long-term cognitive retention and normative alignment among road users.

Second, traffic law enforcement mechanisms must be strengthened and standardized to enhance their visibility, consistency, and credibility. Local government units (LGUs), in coordination with national agencies such as the Land Transportation Office (LTO) and the Philippine National Police–Highway Patrol Group (PNP-HPG), should implement clear operational protocols, regular patrol schedules, and uniform apprehension procedures. Increasing enforcement presence in high-risk areas and ensuring equitable application of penalties will help restore public trust and reinforce the deterrent effect of traffic regulations.

Third, technology-driven enforcement systems should be expanded to address limitations in manpower and reduce opportunities for discretionary or inconsistent enforcement. The adoption of closed-circuit television (CCTV), electronic ticketing systems, and automated monitoring mechanisms can improve transparency, accountability, and efficiency. These systems also provide real-time data that can support evidence-based decision-making and long-term traffic management planning.

Fourth, capacity-building programs for traffic enforcers should be continuously implemented to ensure professionalism, ethical conduct, and operational competence. Training should not only cover legal updates and technical procedures but also emphasize procedural justice, communication skills, and community engagement. Establishing accountability measures—such as performance evaluations and monitoring systems—can further enhance institutional integrity and public confidence.

Finally, a multi-sectoral and community-based approach to traffic governance should be institutionalized. Collaboration among LGUs, enforcement agencies, educational institutions, civil society, and the private sector is essential to create a shared sense of responsibility for road safety. Community participation mechanisms, such as localized monitoring and reporting systems, can help reinforce compliance norms and ensure that traffic regulations are not only enforced but socially internalized.

Collectively, these recommendations underscore the need for an integrated framework that aligns awareness, enforcement, and community engagement. Strengthening these interconnected dimensions is essential for achieving sustainable improvements in traffic discipline and road safety in the study areas and similar contexts.

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