



ANALYZING TRICYCLE DRIVERS ON TRAFFIC RULES AND REGULATIONS: ITS IMPLICATION FOR ROAD SAFETY

Jonadel D. Gerona
Philippine College of Criminology

Article DOI: <https://doi.org/10.36713/epra29113>
DOI No: 10.36713/epra29113

ABSTRACT

This qualitative study examined how tricycle drivers in Butuan City, Philippines understand and comply with traffic rules and regulations and how these behaviors affect road safety. It aimed to determine the personal, social, and contextual influences on drivers' interpretation of traffic regulations; describe drivers' daily experiences, challenges, and decision-making related to compliance and violations; explain how interactions with passengers, operators, and traffic enforcers shape behavior; and identify conditions, strategies, and consequences linked to compliance and non-compliance of tricycle driver to the traffic rules and regulations. Using a Grounded Theory method, purposive sampling was used to interview six tricycle drivers and twenty-two key stakeholders, including cooperative operators, passengers, City Traffic and Transportation Management Division enforcers, and Philippine National Police Traffic Enforcement Unit personnels. Data from semi-structured interviews were coded and analyzed. Findings indicate that compliance is negotiated rather than automatic such as experience and age can increase rules familiarity but may also foster overconfidence or resistance to evolving ordinances, while newer drivers tend to comply due to fear of penalties. Meanwhile, economic survival pressures, passenger demands, road and signage conditions, and the visibility and perceived fairness of enforcement may influence on-road choices. The study concludes that knowledge alone is insufficient because attitudes, situational incentives, and system conditions jointly drive drivers' behavior. The resulting theory, negotiated survival compliance, underscores the need for context-sensitive understanding of compliance to strengthen road safety.

KEYWORDS: Tricycle Drivers, Traffic Rules and Regulations, Compliance Behavior, Road safety, Butuan City.

INTRODUCTION

Globally, road traffic injuries are recognized as a major public health concern. The World Health Organization (WHO) reports that road traffic crashes are the leading cause of death for children and young adults aged 5–29 years, with low- and middle-income countries accounting for over 90% of fatalities despite having only about 60% of the world's vehicles (World Health Organization, 2018). This highlights the disproportionate burden of unsafe transport systems in developing contexts.

Studies in Africa and Asia emphasize that informal transport modes such as motorcycles and tricycles, while affordable and accessible, are associated with high accident rates and weak enforcement of traffic laws. For instance, research in Tanzania found that human error—including speeding, reckless overtaking, and poor knowledge of traffic rules—remains the dominant cause of road crashes (Ngeleja, 2015). Similarly, in Nigeria, scholars noted that livelihood pressures and inadequate enforcement contribute to widespread non-compliance among motorcycle and tricycle drivers (Adebisi et al., 2019).

International literature also points to a gap between knowledge and practice. Even when drivers are aware of traffic rules, compliance is inconsistent due to socio-economic pressures and cultural norms that tolerate violations (Elipse et al., 2023). This discrepancy has been observed across Southeast Asia and Africa, where informal transport systems play a vital role in mobility but pose challenges to regulation and safety.

Furthermore, the United Nations Decade of Action for Road Safety (2021–2030) calls for evidence-based

interventions to reduce road traffic deaths and injuries by 50% worldwide (United Nations, 2021). This global initiative underscores the need for localized studies, such as the one in Butuan City, to examine how drivers interpret and comply with traffic rules within their unique socio-economic and cultural contexts.

In the Philippines setting, tricycles are regulated by local government units (LGUs), and their operations are subject to ordinances that align with national traffic laws. Various programs were introduced by The Land Transportation Office (LTO) and the Department of Transportation (DOTr) aimed at enhancing driver education and licensing. Nonetheless, at the local level, such as Butuan City- it remains a challenge.

Although some studies have stipulated that many tricycle drivers are knowledgeable about the traffic regulations outlined in Republic Act 4136, their adherence to these rules is frequently undermined by factors such as weak enforcement, economic pressures, and inadequate training. This means that knowledge alone is not enough. The Philippine Road Safety Action Plan (2023–2028) emphasized the need for improved driver behavior and stricter enforcement of traffic laws, particularly among public utility vehicle operators.

Despite these national efforts, there is a lack of comprehensive data on the awareness and compliance levels of tricycle drivers, such as those in Butuan. This study seeks to address this gap and support the implementation of more effective local policies.

Tricycles are a vital mode of public transportation in the Philippines, particularly in urban and semi-urban areas such as Butuan City. Tricycles help many people get around because



they are easy to access and relatively inexpensive. However, as more of them hit the roads, and with many operating informally, concerns have grown about safety, traffic rules, and proper regulation. This means that even though traffic laws exist, many tricycle drivers either lack full understanding or fail to consistently follow them, leading to traffic congestion, accidents, and declining road safety (Nguyen, 2020).

Accordingly, traffic rules, regulations, and guidelines must be established and adhered to by drivers in order to reduce the serious risk of an accident (Nilkamal Pvt Ltd, 2018). Based on Philippine Statistics Authority, motorcycle-related injuries account for 69 percent of all reported transportation incidents in the country (Lu, 2016). Also, Road traffic accidents (RTAs) have been a significant contributor to both human and economic losses in countries across all levels of development (Ngeleja, 2015). According to the 2014 report by the National Statistics Office of the Philippines, a total of 43,306 RTAs occurred between 2010 and 2012. Of these, 34,313 were attributed to human error, including reckless overtaking, speeding, improper turning, overloading, hit-and-run incidents, driving under the influence, mobile phone use while driving, and self-inflicted accidents (Transportation Philippines Yearbook, 2014). Also Road traffic fatalities have alarmingly increased in the Philippines, with deaths rising by 39% from 7,938 in 2011 to 11,096 in 2021 (Philippine Statistics Authority, as cited in Junio, 2023).

Previous studies in other cities, such as Cabanatuan dubbed the "Tricycle City of the Philippines" have shown that while drivers may be aware of traffic rules, their actual compliance is often lacking. Additionally, a study conducted by Elipe et al. (2023) reveals a discrepancy between knowledge and practice. As posted in the Facebook account of Butuan City Transportation and Traffic Management Department (2025) that from January to October 2025, Butuan City recorded 1207 road crash incidents, with 47% involving motorcycles with the month of October registering the highest number of incidents. Thus, there is a pressing need for a localized study in Butuan City to examine the personal, social, and contextual factors influencing tricycle drivers' compliance behavior, as well as the consequences of both adherence and violations. This study aims to explore the lived experiences of tricycle drivers and contextual insights of stakeholders aiming to construct a substantive theory that will explain the processes and patterns driving compliance behavior in urban transport settings and this that can inform road safety initiatives and policy development tailored to the unique context of Butuan City.

According to the Philippine Information Agency (2024), in the Article "Butuan City Rolls out Tricycle Modernization," the City, as an emerging urban center in the Caraga Region, has experienced a notable increase in the number of tricycles operating within its area. While the primary mode of transportation for many residents within the City is tricycles, concerns have been raised regarding their contribution to traffic congestion, road accidents, and violations of traffic regulations.

Recent reports from UNTV News and Rescue highlight multiple tricycle-related accidents in Butuan City. In one incident dated May 17, 2025, a tricycle collided with a motorcycle, resulting in two individuals sustaining injuries and requiring immediate medical attention. In another case, a

tricycle crashed into a minivan, leaving three people hurt; first responders provided on-site aid to stabilize the victims (UNTV News and Rescue, 2025). Also, an incident occurred last June 2025 as reported, A motorcycle rider lost control after hitting a dog, resulting in injuries (UNTV News and Rescue, 2025).

These accidents underscore the ongoing traffic safety challenges in the region, particularly involving tricycles, which are a common mode of transportation in Butuan City. It is then observed that frequent infractions by tricycle drivers, including counterflowing, ignoring traffic signals, and improper loading and unloading of passengers, are reported by the City Transportation and Traffic Management Department (CTTMD) and stakeholders. This implies that tricycle drivers may not be compliant with traffic rules and regulations. However, there is a lack of empirical data or studies to support these observations. The absence of a systematic assessment of tricycle drivers' awareness and compliance with traffic regulations poses a challenge for effective policy and enforcement.

This study aims to establish data-driven findings or information for enhancing road safety in Butuan City by analyzing tricycle drivers' compliance to traffic rules and regulations and identifying areas for intervention and policy improvement.

STATEMENT OF THE PROBLEM

Tricycle drivers play a vital role in the public transportation system of Butuan City, yet concerns persist regarding their adherence to traffic rules and regulations. This study aims to analyze tricycle drivers on traffic rules and regulations and its implication for road safety and to address these, the study answers the following specific questions:

1. What personal, social, and contextual factors influence tricycle drivers' understanding and interpretation of traffic regulations?
2. How do tricycle drivers describe their daily experiences, challenges, and decision-making processes related to complying with or violating traffic rules?
3. How do interactions among tricycle drivers, passengers, traffic enforcers, operators, and other stakeholders shape compliance behavior?
4. What conditions, strategies, and consequences emerge from tricycle drivers' compliance and non-compliance with traffic regulations?
5. What substantive theory can be constructed to explain the underlying processes and patterns that drive tricycle drivers' compliance behavior in urban transport settings?

METHODOLOGY

The study employed a qualitative Grounded Theory research design to explore and develop a substantive theory explaining tricycle drivers' compliance with traffic rules and its implications for road safety in Butuan City. A total of 28 participants were involved, consisting of 6 tricycle drivers, 5 cooperative operators, 5 CTTMD traffic enforcers, 4 PNP-TEU personnel, and 8 passengers, selected through purposive, snowball, and random sampling based on established inclusion and exclusion criteria. Data were gathered through validated semi-structured face-to-face interviews using open-ended questions, with the instrument reviewed by three expert



validators. The data collection was conducted from December 2025 to May 2026, with interviews audio-recorded, transcribed verbatim, and analyzed concurrently using Straussian Grounded Theory, involving open, axial, and selective coding, constant comparison, and theoretical saturation. Ethical standards, including informed consent, confidentiality, anonymity, voluntary participation, and compliance with the Data Privacy Act of 2012, were observed. The study was conducted in selected areas of Butuan City and was limited to tricycle-related stakeholders, with findings intended to inform road safety interventions, local transportation policies, and future research. Pasted markdown.

RESULT AND DISCUSSION

Coding Matrix

This table presents the coding matrix for the core category Negotiated Survival Compliance. The matrix shows how causal conditions, contextual factors, intervening conditions, action/interaction strategies, consequences, and feedback loops are connected in explaining tricycle drivers' compliance behavior.

Coding Matrix for Negotiated Survival Compliance

Paradigm Element	Question No.	Integrated Categories/themes from the Results
Causal Conditions	SOP 1	Theme 1. Experience provides knowledge of traffic flow and rules; Theme 2. Overconfidence and complacency among older drivers Theme 3. New drivers are cautious and rule abiding Theme 8. Youthful Agility, Distraction and Risk taking Theme 9. Senior Caution, slower reflexes and rigid habits Theme 11. De-escalation and patient Demeanor Theme12. Short Tempered Driving and road rage risk Theme 15. Modernization as Conditional Mobility Reform;
	SOP 2	Theme 1: Economic Survival and Road Pressures; Theme 4: Socio-Economic, Financial, and Personal Pressures
	SOP 3	Theme 1. Peer Norms and Social Influence Shape Rule-Following; Theme 3. Negative/Pressuring Influences on Driving Behavior and Decision-Making
	SOP 4	Theme 1: Fear of Legal and Financial Sanctions; Theme 2: Commitment to Safety, Livelihood, and Personal Discipline; Theme 3: Socio-Economic Drivers and Operational Convenience; Theme 4: Behavioral Dispositions and Enforcement Deficiencies.
Constraining Context	SOP 1	Theme 17. Structural Obstructions and Forced Traffic Non-Compliance Theme 19. Structural Clarity and Informational Value of Signage;
	SOP 2	Theme 1: Economic Survival and Road Pressures;
Intervening Conditions	SOP 1	Theme 4. Compliance depends on personal discipline not just experience Theme 5. Older drivers as hard-headed or resistant Theme 6: New Drivers more compliant due to fear of penalties Theme 7 Traffic rules evolve and require adaptation Theme 16. Socioeconomic Resistance and Institutional Readiness Gaps; Theme 18. Socio-Economic, Operational, and Safety Hardships; Theme 21. Consistency, Clarity, and Educational Communication as Drivers of Traffic Literacy
	SOP 2	Theme 2: Emotional toll of violation Theme 3: Structural, Environmental, and Systemic Road Challenges
	SOP 3	Theme 2. Compliance is Moderated by Agency, Deterrence, and Work Strain; Theme 5. Consistent, Clear, and Educational Enforcement as a Foundation of Traffic Rule Understanding; Theme 8. Socialization, Experience, and Collective Responsibility
	SOP 4	Theme 1. Fear of Legal and Financial Sanctions; Theme 2. Commitment to Safety, Livelihood, and Personal Discipline; Theme 4. Behavioral Dispositions and Enforcement Deficiencies
Action/Interaction Strategies	SOP 1	Theme 10. Cognitive Application and Moral Discretion; Theme 13. Opportunistic Compliance; Theme 14. Systematic Grievances; Theme 20. Deterrence-Based Compliance vs. Contextual Convenience; Theme 22. Enforcement Visibility and Structural Fairness vs. Intrinsic Driver Discipline



	SOP 2	Theme 5: Enforcement Presence and Legal/Financial Penalties; Theme 6: Time Optimization, Economic Pressure, and Convenience; Theme 7: Passenger Quota and Competition for Income; Theme 8: Individual Disposition
	SOP 3	Theme 4: Driver Resistance, Regulatory Compliance, and Positive Co-Piloting; Theme 6: Visible, Fair, and Internalized Discipline as Drivers of Actual Road Compliance; Theme 7: Institutional Regulation and Formal Traffic Governance
	SOP 4	Theme 5: Compliance and Rule-Oriented Driving Behavior; Theme 6: Safety-Oriented and Preventive Driving Practices; Theme 7: Avoidance and Negotiation Strategies When Apprehended; Theme 8: Acceptance, Compliance, and Accountability
Consequences	SOP 4	Theme 9: Apprehension and Citation; Theme 10: Road Safety, Operational Disruptions, and Psychological Strain
Feedback Loop	Learning and recalibration	Experiences of apprehension, penalties, accidents, or fear reshape future driving decisions. Compliance becomes situational and dependent on perceived risk.

I. Integrated Storyline

Integrating all categories around the core process of Negotiated Survival Compliance. Tricycle drivers possess varying degrees of traffic-rule understanding shaped by driving experience, personal discipline, and awareness of local ordinances. However, daily compliance is not determined by knowledge alone. Instead, it is continually negotiated against livelihood pressures such as quota, debt, and the need to earn enough income for daily household needs.

The findings show that drivers often balance their understanding of traffic rules with the practical realities of road use. Passenger demands; peer influence, congestion, unclear road markings, road obstructions, and construction areas create situations where drivers must decide whether to strictly follow regulations or engage in tactical maneuvers to continue operating efficiently. In such situations, some drivers use shortcuts, counterflow, nonstandard loading or unloading, and other forms of tactical non-compliance as coping mechanisms.

Traffic enforcement also plays an important role in shaping compliance. When enforcement is visible, consistent, fair, and educational, drivers are more likely to obey traffic rules. However, when enforcement is perceived as inconsistent, selective, or biased, drivers may question its legitimacy and rationalize rule evasion. The consequences of violations, such as fines, fear, guilt, stress, license-related risks, and accident possibilities, feed back into drivers' future decisions. As a result, compliance becomes conditional, shifting according to road conditions, economic pressure, passenger demands, and the perceived likelihood of being apprehended.

Therefore, the storyline of the study suggests that tricycle drivers' compliance behavior is not simply a matter of obedience or disobedience. Rather, it is an adaptive process where drivers constantly negotiate between survival, safety, enforcement, and social expectations.

II. Emerging Theoretical Model

The emerging theoretical model of this study explains that tricycle drivers' compliance behavior begins with causal conditions, particularly livelihood pressure and personal driving experience. These conditions operate within a broader context involving traffic congestion, road obstructions, unclear infrastructure, and competing road users. The process is further influenced by intervening conditions, such as enforcement visibility, enforcement fairness, and clarity of road signs.

In response to these conditions, drivers engage in different action/interaction strategies. Some practice adaptive compliance through defensive driving, vehicle preparation, emotional control, and observance of signs. Others engage in tactical non-compliance through shortcuts, counterflow, illegal stops, or other situational violations. When apprehended, some drivers negotiate, plead, justify their actions, use connections, or accept the penalty.

These actions lead to consequences, including legal and economic deterrence, psychological stress, guilt, road rage, accident risk, and changes in driving behavior. These consequences then create a feedback loop, where previous experiences with apprehension, accidents, penalties, or fear influence future decisions. Through this cycle, compliance becomes negotiated, conditional, and context-sensitive.

Negotiated Survival Compliance Theory (NSCT)

Core idea: Compliance is continuously negotiated in response to survival needs, social pressures, enforcement conditions and road constraints.

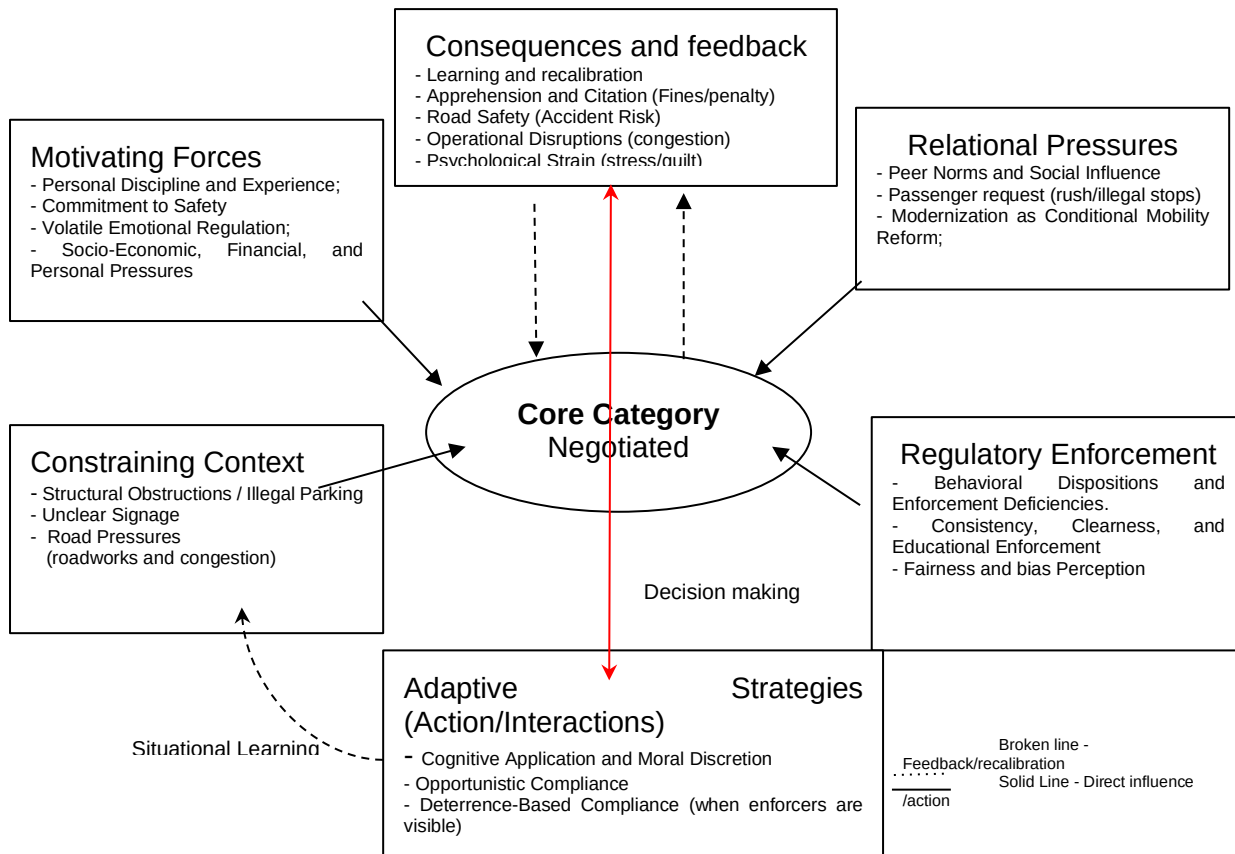


Figure 2. Emerging Theoretical Model of Negotiated Survival Compliance

The proposed theory consists of five interacting components: motivating forces, relational pressures, constraining context, regulatory environment, and adaptive strategies. The NSCT visual model illustrates that compliance is a negotiated process shaped by the interaction of motivating forces, relational pressures, constraining contexts, and the regulatory environment. At the center of the model is negotiated survival compliance, which represents the driver's ongoing effort to balance livelihood needs, safety concerns, social expectations, and enforcement risks. Adaptive strategies emerge from this negotiation and produce consequences that return through a broken feedback loop, influencing future decisions and recalibrating compliance behavior over time. Motivating forces include livelihood pressure, safety concerns, personal discipline, and driving experience. Relational pressures refer to the influence of passengers, peers, operators, TODA-related reminders, and Modernization as Conditional mobility reform. Constraining context includes congestion, roadworks, unclear markings, illegal parking, and other road conditions that limit drivers' ability to comply. The regulatory environment refers to enforcer visibility, consistency of enforcement, communication of rules, and perceptions of fairness or bias. These four conditions interact and shape the driver's compliance-related decision-making.

From this negotiation, drivers develop adaptive strategies. These strategies may include redirecting passengers to safer or more acceptable stopping points, complying selectively when enforcement is visible, taking tactical risks when apprehension seems unlikely, or explaining and justifying

behavior when apprehended. These adaptive strategies show that drivers are not passive recipients of regulation; instead, they actively interpret, adjust, and respond to the conditions around them.

The theory also includes a feedback loop, which explains how consequences influence future compliance behavior. Consequences may include fines, delays, stress, guilt, accident risk, congestion, or learning from previous encounters. These consequences do not simply end the compliance process. Instead, they return to the driver's decision-making system and affect future actions. For this reason, the feedback loop in the visual model is represented as a broken line, indicating that feedback is not always immediate, direct, or continuous. It may occur through repeated experiences, memory of past apprehensions, observation of other drivers, or changes in enforcement patterns.

Proposed Substantive Theory: Negotiated Survival Compliance Theory (NSCT)

This study proposes the **Negotiated Survival Compliance Theory (NSCT)** as an emergent substantive theory explaining how drivers understand, negotiate, and practice traffic compliance within everyday road realities. The theory emerged from the participants' accounts, which revealed that compliance is not experienced merely as a simple choice between following or violating traffic rules. Rather, compliance is continuously negotiated in relation to livelihood needs, passenger demands, road conditions, enforcement visibility, social expectations, and the perceived consequences of apprehension. This explains driver non-compliance as a result of an ongoing decision-making process in which drivers



continuously negotiate between legal requirements and the practical realities of everyday survival. Rather than viewing traffic violations as simple acts of disobedience, the theory demonstrates that non-compliance emerges when drivers perceive that meeting immediate survival, economic, social, or operational demands is more urgent than strict adherence to traffic regulations.

Therefore, non-compliance can be understood through the process of negotiated survival compliance. Drivers evaluate each traffic situation by weighing multiple factors, including the likelihood of enforcement, the need to earn income, passenger expectations, road conditions, time pressure, and personal safety. When these competing demands create conflict with traffic rules, drivers often engage in situational decision-making. In some circumstances, they choose compliance because it is safer or because enforcement is visible. In other situations, they engage in selective or temporary non-compliance when they believe that violating a rule will help them meet immediate needs with minimal risk of punishment. The findings suggest that compliance and non-compliance exist on a continuum rather than as opposing behaviors.

The central proposition of NSCT is that drivers engage in negotiated survival compliance, a process in which traffic-related decisions are shaped by the need to balance rule-following with practical survival. In this sense, drivers do not always comply because they fully accept the rule, nor do they always violate because they reject the law. Instead, drivers assess each situation and decide based on what appears most practical, safe, acceptable, or necessary at a particular moment. This makes compliance a dynamic and context-sensitive behavior rather than a fixed or purely legal response.

Langbein and Kerwin argue that compliance decisions may depend not only on the existence of standards or rules, but also on how regulatory agencies implement them and how regulated actors negotiate compliance in practice. Similarly, Gunningham's discussion of negotiated non-compliance emphasizes that enforcement processes may involve bargaining, accommodation, and variation in how agencies respond to regulated actors. These related works support the idea that compliance is not always automatic, linear, or purely rule-based.

However, NSCT differs from general negotiated compliance theories because it emphasizes the survival-based and livelihood-centered context of drivers. In the present study, compliance is shaped not only by regulation but also by the immediate need to earn, avoid delays, respond to passengers, manage road obstacles, and reduce the risk of penalties. Thus, NSCT contributes a more localized and grounded explanation of how drivers make decisions under pressure. It highlights the lived realities of drivers who must constantly negotiate between legal expectations and everyday survival demands.

NSCT also relates to responsive regulation, particularly the idea that regulatory behavior is shaped by flexible interaction between regulators and regulated groups. Ayres and Braithwaite's Responsive Regulation explains that regulation may involve persuasion, negotiation, self-regulation, and sanctions arranged through an enforcement pyramid. Braithwaite further explains that responsive regulation involves listening to multiple stakeholders and choosing flexible regulatory strategies depending on context. NSCT extends this

idea by showing that drivers themselves also become responsive actors such as they adjust their behavior depending on the visibility of enforcers, the strictness of enforcement, passenger pressure, and road conditions.

The occurrence of non-compliance is rooted in several interconnected influences identified by participants. First, livelihood pressure plays a major role. Many drivers depend on daily earnings to support themselves and their families. When traffic regulations are perceived as reducing productivity, delaying trips, or limiting earning opportunities, drivers may prioritize economic survival over strict compliance. Second, passenger expectations contribute to non-compliance. Drivers frequently experience pressure from passengers who demand faster travel, immediate pickup and drop-off, or shortcuts that conflict with traffic regulations. To maintain customer satisfaction and income, drivers may adapt their behavior accordingly.

Third, environmental and road-related factors influence compliance decisions. Poor road conditions, traffic congestion, unclear signs, inadequate infrastructure, and inconsistent traffic management can create situations in which drivers perceive non-compliance as the most practical option. Under such conditions, drivers may believe that strict compliance is difficult, inefficient, or even unsafe. Fourth, the visibility and consistency of enforcement affect driver behavior. Participants indicated that compliance often increases when traffic officers are present or when penalties appear likely. Conversely, when enforcement is perceived as absent, inconsistent, or avoidable, drivers become more willing to engage in tactical violations.

The theory is also connected to deterrence theory, especially in relation to traffic enforcement. Deterrence-based studies explain that compliance may be influenced by perceived certainty of apprehension, severity of punishment, and previous experiences with punishment or punishment avoidance. Road safety literature also emphasizes that penalties are used to encourage compliance with traffic laws and that deterrence depends on certainty, severity, and swiftness of punishment. In NSCT, however, deterrence is only one part of the decision-making process. Drivers may comply when enforcement is visible, but they may also engage in selective compliance or tactical violations when they perceive enforcement to be absent, inconsistent, or avoidable.

The main theoretical contribution of NSCT is its explanation of traffic compliance as a survival-oriented negotiation. Traditional views may frame traffic violations mainly as disobedience, lack of discipline, or weak enforcement. NSCT offers a more nuanced explanation by showing that drivers' compliance behavior is produced through the interaction of personal, social, economic, environmental, and regulatory factors. This does not justify traffic violations, but it helps explain why violations occur and why compliance may vary across situations.

Emerging from the **Negotiated Survival Compliance Theory (NSCT)** is that the process of negotiated survival compliance may increase exposure to road safety risks and the likelihood of traffic accidents among tricycle drivers. While drivers often make decisions based on livelihood needs, passenger demands, operational efficiency, and perceived enforcement conditions, these decisions may unintentionally



compromise safe driving practices. The theory suggests that when immediate survival concerns outweigh compliance considerations, drivers may engage in behaviors that elevate exposure to road hazards. From the perspective of NSCT, non-compliance does not only represent a regulatory issue but also a road safety concern. Participants' accounts indicate that drivers sometimes perform traffic maneuvers such as speeding, illegal stopping, overloading passengers, unsafe overtaking, obstruction of traffic flow, or operating within restricted areas to maximize earnings or respond to passenger requests. Although these actions may provide short-term economic benefits, they also increase the probability of collisions, injuries, and road-related incidents. Consequently, negotiated non-compliance can create conditions that heighten accident risks for drivers, passengers, pedestrians, and other road users.

The theory explains how road safety risks emerge through the continuous balancing of competing priorities. Drivers may recognize the safety value of traffic laws but choose actions that they perceive as necessary for maintaining income or meeting immediate demands. In situations involving congestion, limited passenger opportunities, or time pressure, safety considerations may become secondary to survival-related concerns. This decision-making process can result in risk-taking behaviors that gradually normalize non-compliance and increase vulnerability to accidents.

NSCT further explains why accidents become more likely among tricycle drivers. First, livelihood dependency often encourages maximizing the number of trips completed within a day, which may lead to rushing, speeding, or reduced adherence to traffic rules. Second, passenger pressure may influence drivers to stop in unsafe locations, take shortcuts, or travel more quickly than road conditions permit. Third, poor road infrastructure, inadequate signage, congested traffic conditions, and limited road space for tricycles may push drivers toward adaptive but potentially unsafe practices. Finally, when enforcement is perceived as inconsistent, drivers may underestimate safety risks and focus more on avoiding penalties than on preventing accidents.

A significant contribution of NSCT is its recognition that the consequences of negotiated non-compliance extend beyond legal violations. The theory demonstrates that repeated situational decisions to prioritize survival over compliance may cumulatively increase accident exposure. In this sense, non-compliance serves as both an economic adaptation and a safety risk. The more frequently drivers engage in tactical violations, the greater the possibility that unexpected road events, human errors, or environmental hazards may lead to crashes. Therefore, NSCT argues that improving road safety among tricycle drivers requires addressing the underlying survival pressures that shape driving behavior. Road safety interventions should not rely solely on penalties and enforcement but should also consider livelihood realities, passenger awareness, traffic management, infrastructure improvements, and consistent regulatory implementation. By reducing the factors that force drivers to negotiate between compliance and survival, policymakers may simultaneously improve traffic law compliance and reduce accident risks.

Thus, NSCT contributes to traffic compliance literature by providing a grounded explanation of how drivers make decisions in real-world conditions. It suggests that

improving compliance requires more than stricter penalties. Effective intervention should also address unclear road signs, inconsistent enforcement, passenger behavior, livelihood pressures, road congestion, and communication between drivers and authorities. In this way, NSCT can guide policymakers, traffic enforcers, transport groups, and community leaders in developing more realistic, fair, and context-sensitive compliance strategies and reduce accident risks.

Theoretical Propositions

Based on the selective coding process, the following theoretical propositions were developed:

1. **If livelihood pressure increases**, such as the need to meet quota, pay debts, or earn daily income, then tricycle drivers are more likely to engage in tactical non-compliance, especially during congestion or high passenger demand.
2. **If enforcement is visible, consistent, and penalties are perceived as certain**, then compliance increases even among drivers who have previously violated traffic rules.
3. **If enforcement is perceived as inconsistent, selective, or biased**, then compliance decreases because drivers may view rule implementation as unfair and may rationalize evasion.
4. **If road signs, markings, and infrastructure are unclear, damaged, obstructed, or confusing**, then drivers are more likely to experience uncertainty and may commit forced or situational violations.
5. **If passenger pressure intensifies**, such as demands for faster travel, illegal drop-off points, or convenience-based stops, then drivers may shift their decisions toward conflict avoidance or convenience-based compliance.
6. **If drivers possess strong internal discipline and safety orientation**, then they are more likely to comply with traffic rules even when enforcers are not present.
7. **If drivers experience penalties, accidents, fear, or psychological stress after violations**, then they may recalibrate their future behavior and become more cautious in similar situations.

Final Theory Statement

The **Negotiated Survival Compliance Theory** posits that tricycle drivers' compliance behavior in urban transport settings is not a stable trait but an adaptive and context-sensitive process shaped by the interaction of livelihood survival, social pressures, enforcement legitimacy, and infrastructural constraints. Drivers interpret and apply traffic regulations through their experience, discipline, and knowledge of ordinances. However, real-world conditions such as congestion, road obstructions, unclear signage, passenger demands, and peer influence require continuous risk negotiation. Where enforcement is clear, fair, visible, and consistent, compliance increases.

However, where enforcement is inconsistent, unclear, or perceived as biased, drivers may normalize evasion or tactical non-compliance. The consequences of violations, including fines, stress, fear, guilt, accident risk, and possible license-related penalties, feed back into future decisions and reshape driving behavior. Thus, tricycle drivers' compliance



emerges as a negotiated process of survival, safety, convenience, and perceived risk.

Outcome of the Study

Tricycle Drivers' Traffic Compliance Enhancement and Road Safety Program

I. Rationale

Tricycle drivers are the backbone of local urban mobility, providing essential first- and last-mile connectivity for the commuting public. However, recent findings highlight a critical gap in local transport dynamics: a driver's theoretical knowledge of traffic rules does not automatically translate into consistent, on-road compliance.

Traffic behavior is rarely shaped by ignorance alone; rather, it is a complex response to compounding daily pressures. Drivers navigate a demanding environment influenced by three primary factors:

Socio-economic pressures: The daily hustle to meet quotas and compete for passenger demand often incentivizes aggressive driving over safety.

Systemic and infrastructural challenges: Inconsistent enforcement of traffic laws, poor road conditions, and ambiguous signage create an environment where violations are easily normalized.

Behavioral and personal factors: Driver fatigue, emotional dysregulation, and a lack of continuous road-safety education directly impact decision-making behind the wheel.

Left unaddressed, these intersecting factors create a negative feedback loop of unsafe practices, frequent violations, and an elevated risk of road accidents endangering both the commuting public and the drivers whose livelihoods depend on the road.

Therefore, closing this knowledge-action gap requires a context-sensitive intervention. Traditional, awareness-level seminars are insufficient. To achieve lasting impact, the local transport system requires a holistic program that goes beyond basic education to drive genuine behavioral change, reinforce fair enforcement, improve physical infrastructure, and foster collaborative accountability among all stakeholders.

II. Objectives of the Program

To cultivate a culture of voluntary traffic compliance among tricycle drivers and elevate overall road safety standards within the local transport ecosystem.

Specific Objectives

To achieve this, the program is designed to:

- Elevate Driver Competency:** Equip drivers with a practical, updated understanding of traffic laws and local ordinances through accessible, continuous education.
- Foster Behavioral Change:** Develop defensive driving habits, emotional regulation, and personal discipline to mitigate stress-induced reckless driving.

- Standardize Enforcement:** Strengthen fair, consistent, and transparent monitoring mechanisms among local traffic authorities.
- Strengthen Institutional Synergy:** Build an active, collaborative network among Local Government Units (LGUs), traffic enforcers, Tricycle Operators and Drivers' Associations (TODAs), and the commuting public.
- Address Physical Barriers:** Advocate for and implement targeted infrastructural improvements, such as visible traffic signage and hazard mitigation in high-risk zones.
- Measure Safety Outcomes:** Significantly reduce the recorded incidence of tricycle-related traffic violations and road accidents.

III. Methodologies/Strategies

To effectively translate the program's objectives into measurable outcomes, the intervention will utilize a multi-sectoral approach that combines education, enforcement, and environmental adjustments. The core strategies include:

- Integrated Capacity Building and Values Formation:** Moving beyond traditional lectures, the program will deliver experiential workshops. This combines technical refresher courses on updated traffic laws with psychological training focused on emotional regulation, road ethics, and stress management.
- Procedural Justice in Enforcement:** To build trust and compliance, traffic enforcement will shift toward a "stricter but fair" enforcement. This involves training enforcers in standardized, transparent apprehension protocols so drivers perceive penalties as objective and unbiased rather than punitive.
- Community-Based Self-Regulation:** By establishing internal disciplinary committees and peer-monitoring systems, the program leverages social pressure and organizational pride to enforce discipline from within.
- Collaborative Infrastructure Advocacy:** Working directly with the LGU Engineering Office to address the physical environment. This involves joint audits to ensure road signs are visible, roads are maintained, and traffic flows logically, removing environmental triggers for violations.
- Participatory Commuter Engagement:** Launching public awareness campaigns that empower passengers to recognize and report safe driving, creating a community-wide expectation of road safety.
- Data-Driven Evaluation:** Implementing a continuous feedback loop using apprehension records, accident reports, and driver feedback to measure the program's effectiveness and adjust strategies dynamically.



Program Implementation Matrix

Program	Objectives of the Service	Activities	Expected Output	Responsible Person	Budgetary Requirements
1. Driver Education and Reorientation Program	Enhance knowledge of traffic laws and updated regulations	- Conduct regular seminars - Distribute traffic manuals - Orientation on RA 4136 and local ordinances	Improved awareness and understanding of traffic rules	LGU, LTO, Traffic Enforcers, TODA Officers	Printing materials, training kits, honorarium
2. Values Formation and Behavior Management Program	Improve discipline, attitude, and emotional control of drivers	- Workshops on discipline and road ethics - Stress and anger management sessions - Role-playing scenarios	Positive driving behavior and reduced aggressive driving	Guidance experts, LGU, NGOs	Training materials, facilitator fees
3. Strengthened Traffic Enforcement Program	Ensure consistent and fair enforcement of traffic rules	- Increase visibility of enforcers - Implement standardized penalties - Orientation for enforcers on fairness	Increased compliance and reduced violations	Traffic Management Office, PNP-TEU	Equipment, uniforms, monitoring tools
4. TODA-Based Monitoring and Support Program	Promote self-regulation within driver organizations	- Establish TODA disciplinary committees - Peer monitoring system - Incentives for compliant drivers	Strengthened internal discipline system	TODA Leaders, LGU	Incentives, administrative costs
5. Passenger Awareness Campaign	Encourage passengers to support safe driving practices	- Public awareness campaigns - Posters and social media campaigns - Feedback system for complaints	Informed commuters supporting compliance	LGU, Media, Transport Office	IEC materials, media expenses
6. Road and Infrastructure Improvement Coordination	Address environmental factors affecting compliance	- Identify high-risk areas - Improve signage and road markings - Coordinate road repairs	Safer road environment and clearer traffic guidance	LGU Engineering Office, DPWH	Road signage, repair funds
7. Monitoring and Evaluation Program	Assess effectiveness of interventions	- Regular evaluation meetings - Data collection on violations and accidents - Feedback surveys	Measurable improvement in compliance and safety	Researcher, LGU, Traffic Office	Monitoring tools, documentation



CONCLUSIONS

Based on the findings, the study concludes that tricycle drivers' compliance with traffic regulations is not solely determined by knowledge of the rules but is the result of a complex interaction between personal discipline, economic survival, social influence, and environmental conditions. While drivers generally understand traffic regulations, their actual behavior is shaped by situational pressures and practical realities encountered in daily operations.

The study further concludes that enforcement plays a central role in influencing compliance. Drivers are more likely to follow traffic rules when enforcement is visible, consistent, and fair, suggesting that compliance is largely deterrence-driven rather than fully internalized. However, intrinsic discipline and moral responsibility remain important factors for sustained compliance, particularly among drivers who follow rules even without supervision.

Moreover, livelihood pressures significantly affect decision-making, as drivers often prioritize income generation over strict adherence to regulations. This indicates that traffic behavior cannot be separated from the socio-economic conditions of drivers. Similarly, contextual challenges such as poor infrastructure, unclear signage, and traffic congestion limit drivers' ability to comply consistently.

Social interactions, including peer influence and passenger behavior, also contribute to either reinforcing or weakening compliance. These interactions demonstrate that traffic behavior is not purely individual but is shaped by shared practices and external pressures.

The findings support the idea that compliance is a negotiated process, where drivers constantly balance safety, legality, convenience, and economic needs. Therefore, improving traffic compliance requires not only stricter enforcement but also better infrastructure, consistent policies, driver education, and supportive socio-economic measures.

The more frequently drivers engage in tactical violations, the greater the possibility that unexpected road events, human errors, or environmental hazards may lead to crashes.

RECOMMENDATIONS

Based on the findings and the conclusions of the study, the following recommendations are addressed to the following agencies and entities;

1. Traffic Enforcement Agencies. Strengthen the consistent and fair implementation of traffic enforcement to ensure that rules are applied equally to all road users and to eliminate perceptions of bias and favoritism.

2. City Traffic and Transportation Management Department. Enhance driver education programs and seminars that focus on both traffic rules and values formation to promote internalized discipline and long-term compliance. Develop livelihood-support programs for tricycle drivers, such as financial assistance or alternative income strategies, to reduce economic pressure that leads to violations. Implement passenger awareness campaigns to educate commuters about traffic rules and discourage them from forcing drivers to commit violations. Introduce programs addressing driver well-

being, such as stress management and fatigue awareness, to improve concentration and safe driving practices.

3. Department of Public Works and Highways. Improve road infrastructure and traffic signage, including clear markings and proper maintenance, to reduce confusion and enable drivers to follow regulations effectively. Establish designated and well-managed loading and unloading areas to minimize common violations and reduce traffic congestion.

4. Tricycle Operators and Drivers' Associations. Promote community-based and peer-led initiatives within driver groups or associations to encourage positive behavior modeling and collective discipline.

5. Local Government Unit, Policy Makers and Urban Planners. Ensure gradual and well-communicated implementation of transport modernization programs, including proper orientation, financial support, and stakeholder consultation. Adopt and implement the study's outcome, particularly the concept of compliance as a situational and negotiated behavior, as a basis for developing comprehensive traffic management policies that integrate enforcement, education, infrastructure, and socio-economic support.

REFERENCES

1. Angeles, R. S. L., Cobarrubias, N. A. A., Cipriano, B. M. C., et al. (2026). *Assessing PUV Modernization Program industry consolidation and financing towards just transition for transport workers*. National Center for Transportation Studies, University of the Philippines Diliman.
2. Asian Transport Observatory. (2025). *Philippines road safety profile 2025*. Manila: ATO Publications.
3. BTODA. (2021). *Internal sanctions and compliance monitoring among tricycle drivers in Butuan*. Butuan Tricycle Operators and Drivers Association Report.
4. Butuan City Council. (2025). *Legislative review on tricycle operations and compliance*. Butuan City Council Proceedings.
5. Butuan City LGU. (2021). *Local ordinance on tricycle operations and compliance*. Butuan City Government Records.
6. Butuan City Police Office. (2024). *Annual traffic enforcement report*. Butuan City Police Records.
7. Caraga Regional Development Council. (2022). *Modernization strategies for tricycle operations in Caraga*. RDC Policy Brief.
8. Caraga State University. (2022). *Survey on tricycle driver compliance in Caraga*. CSU Research Office.
9. Caraga State University Graduate Studies. (2025). *Decision-making processes of tricycle drivers in Caraga*. Graduate Research Monograph.
10. Doumen, M., & Vlakveld, W. (2023). *Road safety thematic report: Young novice drivers*. European Commission.
11. Karachi Chamber of Commerce and Industry. (2017). *Urban mobility and traffic safety report: Karachi 2017*. KCCI Publications.
12. Kunard, L., & Moe, C. (2015). *Procedural justice for law enforcement: An overview*. Office of Community Oriented Policing Services. <https://portal.cops.usdoj.gov>
13. Kurenkov, M., Marvi, S., Schmidt, J., et al. (2024). *Traffic and safety rule compliance of humans in diverse driving situations*. arXiv preprint.
14. Mayhew, D. R., Vanlaar, W. G. M., Robertson, R. D., et al. (2024). *Driver education and training promising practices: A systemic literature review* (Report No. DOT HS 813 566).



- National Highway Traffic Safety Administration.
<https://rosap.nhtl.bts.gov>
15. Philippine Statistics Authority. (2023). Transport-related incidents and causes of road traffic accidents. PSA Statistical Bulletin.
 16. Pierson, E., Simoiu, C., Overgoor, J., et al. (2019). A large-scale analysis of racial disparities in police stops across the United States. Stanford Computational Policy Lab.
 17. Watson, B., Kaye, S. A., Lewis, I., et al. (2024). Review of deterrence theory and enforcement case studies.
 18. Zaal, D. (2020). Traffic law enforcement: A review of the literature. Monash University Accident Research Centre.
 19. Riaz, I., & Shahid, S. (2018, February 19–20). Knowledge, attitudes, and practice of drivers towards traffic rules and regulations in Multan, Pakistan. Proceedings of the 7th International RAIS Conference.
<https://ideas.repec.org/p/smo/fpaper/011.html>
 20. Takumi, K., Kaede, K., Watanuki, K., et al. (2024). Evaluation of driver overconfidence in automotive driving. AHFE Conference Proceedings.