YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF APPLIED ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME

A STUDY ON THE AWARENESS OF ROAD SAFETY IN SHWE PYI THAR TOWNSHIP

TUN LIN NAING
MPA – 69 (21st BATCH)

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A STUDY ON THE AWARENESS OF ROAD SAFETY IN SHWE PYI THAR TOWNSHIP

A thesis submitted as a partial fulfilment of the requirements for the degree of Master of Public Administration (MPA)

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This is to certify that the thesis entitled "**A Study on the awareness of road safety in Shwe Pyi Thar Township**" submitted as partial fulfillment towards the requirements for the Degree of Master of Public Administration (MPA) has been accepted by the Board of Examiners.

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ABSTRACT

This study aims to investigate the road safety awareness of road users in Shwe Pyi Thar Township, Yangon Region, using a descriptive method that incorporated both primary and secondary data. Primary data are gathered through a survey of 250 road users, including drivers, pedestrians, and cyclists, using a structured questionnaire, while secondary data are collected from local authorities. The findings reveal a generally high level of road safety awareness, with most respondents consistently wearing seat belts or helmets and displaying a strong understanding of road safety practices. However, gaps in knowledge regarding legal speed limits, the legal blood alcohol concentration (BAC) limit, and the use of child car seats are identified. Additionally, infrastructure issues, such as inadequate street lighting and frequent traffic rule violations, highlight the need for better enforcement and improvements. To address these issues, targeted educational initiatives on speed limits, alcohol consumption, and child safety measures are recommended, alongside infrastructure enhancements and stricter enforcement of traffic laws.

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CONTENT

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ABBREVIATIONS

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
BAC	Blood Alcohol Concentration
DUI	Driving Under the Influence
GRSP	Global Road Safety Partnership
ITF	International Transport Forum
MRCS	Myanmar Red Cross Society
MRSAP	Myanmar National Road Safety Action Plan
MRSO	Myanmar Road Safety Organization
NGOs	Non-Governmental Organizations
NHTSA	National Highway Traffic Safety Administration
NRSAP	National Road Safety Action Plan
NRSC	National Road Safety Council
OECD	Organization for Economic Co-operation and Development
RTA	Road Traffic Accident
RTAD	Road Transport Administration Department
SARSAI	School Area Road Safety Assessment and Improvement
SDG	Sustainable Development Goals
SMEs	Small and Medium Enterprises
UN	United Nations
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Rationale of the Study

Road safety is a pressing global public health issue, with road traffic injuries and fatalities contributing significantly to preventable deaths and disabilities. The Global Status Report on Road Safety (2023), published by the World Health Organization (WHO), reveals the continued high toll of road traffic accidents, despite ongoing global efforts to reduce their occurrence. According to the report, road traffic deaths have slightly decreased to 1.19 million per year globally, signaling some progress in improving road safety. However, the report also highlights that the current level of road traffic deaths remains unacceptably high (WHO, 2023). Urgent action is required to achieve the United Nations Decade of Action for Road Safety 2021-2030 target, which aims to halve road traffic deaths and injuries by 2030 (United Nations, 2021).

In Myanmar, road safety awareness remains a critical issue. With increasing urbanization and motorization, traffic accidents have become more frequent, resulting in significant fatalities and injuries. In 2022, Myanmar reported over 15,000 road traffic accidents, leading to more than 5,000 deaths and numerous severe injuries (Road Transport Administration Department, 2022). These accidents not only have devastating consequences for the individuals involved but also place a significant economic burden on healthcare systems and communities. The costs associated with road traffic injuries, including medical expenses, lost productivity, and long-term care, exacerbate the economic strain on families and the nation (WHO, 2023).

Awareness of road safety is a key element in preventing road traffic accidents. Understanding the dangers of speeding, driving under the influence, distracted driving, and non-compliance with safety measures like helmet and seatbelt use is crucial for drivers, pedestrians, and passengers alike. Data shows that countries that implement comprehensive road safety campaigns, focusing on both education and enforcement, see notable reductions in road traffic accidents and fatalities (WHO, 2023). However, in Myanmar, a gap in road safety education persists, particularly in rural areas where access to awareness campaigns is limited. According to a recent survey by the Road Transport Administration Department (RTAD), only 45% of rural respondents had

adequate knowledge of basic road safety principles, compared to 70% in urban areas (RTAD, 2022).

The importance of road safety awareness is not only a national concern but also a global one. The United Nations Decade of Action for Road Safety 2021-2030 highlights the need for countries to commit to reducing road traffic deaths and injuries by half (United Nations, 2021). Achieving this goal requires a multifaceted approach, including stronger enforcement of road safety laws, enhanced public awareness, and improved infrastructure. Road safety awareness campaigns are essential in educating the public and encouraging safer behavior, leading to fewer accidents and reduced road traffic deaths (WHO, 2023).

Road safety awareness is still in its developing stages in Myanmar. Many drivers, pedestrians, and other road users have limited knowledge about traffic rules and safe practices, leading to frequent accidents and fatalities. The Yangon Region Traffic Police has reported a rising trend in road accidents, particularly in townships like Shwe Pyi Thar, where rapid urban development has not been matched by adequate infrastructure improvements (Yangon Region Traffic Police, 2022). Shwe Pyi Thar Township is characterized by congested roads, mixed traffic (including motorcycles, cars, and pedestrians), and a lack of proper pedestrian crossings, contributing to the dangerous road environment.

Despite the growing need for road safety awareness, several problems persist in Shwe Pyi Thar Township. A lack of comprehensive road safety education programs, inadequate traffic enforcement, and poor infrastructure contribute to low levels of road safety awareness among residents. Many road users are unaware of basic traffic laws, while others neglect to follow them due to the absence of strict penalties or frequent police checks (Yangon Region Traffic Police, 2022). Furthermore, the township's infrastructure, such as poorly maintained roads and insufficient pedestrian facilities, increases the likelihood of accidents, especially for road users like motorcyclists and pedestrians (Road Transport Administration Department, 2022).

Given these factors, conducting a study on road safety awareness in Shwe Pyi Thar Township is both timely and essential. This study aims to assess the current level of awareness among road users, identify key areas where knowledge gaps exist, and recommend targeted interventions to improve road safety. Understanding the specific challenges faced by residents of Shwe Pyi Thar can help inform local authorities and

policymakers in designing more effective road safety campaigns and infrastructural improvements. By addressing the gaps in road safety awareness, this study contributes to reducing road accidents and promoting a safer environment for all road users in the township.

1.2 Objectives of the Study

The objective of this study was to investigate the awareness of road users in Shwe Pyi Thar Township, Yangon Region.

1.3 Method of Study

In this study, the descriptive method was used, incorporating both primary and secondary data. Secondary data were collected from the Local Traffic Police Station, the Township Red Cross Branch, and the Fire Services Department in Shwe Pyi Thar Township. For primary data, a survey was conducted from 250 road users in Shwe Pyi Thar Township using a structured questionnaire.

1.4 Scope and Limitation of the Study

This study focused on road safety issues and public awareness among road users in Shwe Pyi Thar Township, Yangon Region. The survey was conducted from August to September 2024.

1.5 Organization of the Study

This study was organized into five chapters. Chapter I introduced the study, detailing the rationale, objectives, methods, scope, limitations, and organization of the study. Chapter II reviewed the literature on the various factors contributing to road traffic accidents. Chapter III provided an overview of road safety and road traffic accidents specifically in Myanmar. Chapter IV presented the analysis of the survey data collected during the study. Finally, Chapter V summarized the findings, drew conclusions, and offered suggestions based on the research outcomes.

CHAPTER II
LIERATURE REVIEW

The literature on road safety awareness encompasses both theoretical frameworks and empirical studies that highlight the importance of understanding road safety principles to reduce traffic accidents and fatalities. By examining both theoretical perspectives and empirical evidence, the literature review aims to provide a comprehensive understanding of road safety awareness and its critical role in promoting safer driving behaviors and reducing road traffic accidents.

2.1 Importance of Road Safety Awareness

Road safety awareness is crucial in reducing traffic accidents, fatalities, and injuries. By promoting safer behaviors such as adherence to traffic laws, the use of safety equipment like seatbelts and helmets, and the avoidance of risky practices like speeding and driving under the influence, awareness programs play a vital role in public safety. Globally, road traffic injuries are a leading cause of death among individuals aged 15-29, many of which could be prevented through enhanced safety education efforts (WHO, 2023).

Educational campaigns are instrumental in shaping the behavior of road users by promoting responsible driving habits and defensive driving techniques. Regular exposure to safety messages has been shown to decrease dangerous behaviors such as speeding and distracted driving. Research confirms that consistent road safety education leads to significant improvements in driver behavior and reduces accident rates (Global Road Safety Partnership, 2022).

Vulnerable road users, such as pedestrians, cyclists, and motorcyclists, benefit greatly from targeted road safety awareness programs. These groups are more exposed to physical risks, making awareness about helmet use, pedestrian safety, and safe cycling practices even more essential. For instance, correct helmet use reduces the risk of death by 42% and serious injury by 69%, underscoring the life-saving potential of education programs focused on road safety (WHO, 2023).

Effective road safety campaigns require the combined efforts of policymakers, law enforcement, and public health officials. Traffic laws, including those governing speed limits and seatbelt use, must be rigorously enforced in tandem with awareness

campaigns to bring about lasting behavioral change. Evidence shows that when public awareness is paired with strong law enforcement, there is a significant reduction in road traffic injuries and fatalities (Peden et al., 2004). Additionally, reducing road traffic accidents (RTAs) through safety programs lessens the economic burden these accidents impose. Studies show that RTAs cost countries between 1% and 3% of their gross national product annually, highlighting the financial benefits of investing in road safety education (Aeron-Thomas & Jacobs, 2011).

Furthermore, a study of Mohammed et al. (2016) stated that promoting road safety from a young age is essential in cultivating lifelong responsible behaviors. Incorporating road safety education into school curricula effectively teaches children safe practices, such as pedestrian safety and helmet use. Early education helps prepare future generations to become responsible road users, thereby fostering long-term improvements in public safety.

Beyond road safety, road traffic awareness emphasizes educating road users about rules, risks, and responsibilities associated with traffic laws. This education is key to reducing road traffic accidents by promoting safe driving practices and adherence to regulations. Research shows that when drivers, pedestrians, and cyclists are aware of traffic laws, risky behaviors such as speeding, reckless driving, and ignoring traffic signals decrease (Elvik et al., 2022).

Educational initiatives, such as media campaigns and school programs, focus on fostering defensive driving, obeying speed limits, and avoiding distractions. Studies indicate that drivers exposed to traffic safety training or awareness campaigns are significantly less likely to be involved in accidents, demonstrating the positive impact of these programs (Ziakopoulos & Yannis, 2021).

Pedestrians, cyclists, and motorcyclists, particularly in developing countries where traffic safety knowledge is limited, are at a higher risk of injury. Awareness campaigns that promote safe crossing practices, helmet use, and adherence to traffic signals have been shown to reduce accidents among these vulnerable groups. A study conducted in South Asia found that pedestrian fatalities decreased by 28% following the introduction of road safety education initiatives (Singh & Sharma, 2021).

Motorcyclists, especially in regions where motorcycles are a primary mode of transport, benefit greatly from road traffic awareness programs. Campaigns promoting helmet use and safe riding practices have been shown to decrease accident rates and

fatalities among motorcyclists by up to 30%, according to updated WHO data (WHO, 2023).

While law enforcement is crucial in maintaining traffic safety, it is most effective when combined with public awareness efforts. Countries that pair traffic law enforcement with public awareness campaigns experience more sustainable reductions in accidents and fatalities. Research indicates that awareness, when coupled with strong enforcement measures like fines for speeding and seatbelt violations, leads to lasting improvements in road safety (Peden et al., 2021).

Finally, Strayer & Watson (2022) stated that road traffic awareness helps address emerging risks like distracted driving, which is increasingly linked to mobile phone use. Studies show that using mobile phones while driving increases the risk of accidents by four times. Public awareness campaigns targeting this issue, particularly among younger drivers, have proven effective in reducing mobile phone use behind the wheel.

Therefore, road safety and traffic awareness programs are vital for creating a safer environment for all road users. Through education, targeted campaigns, and law enforcement, these initiatives reduce accidents, protect vulnerable groups, and address modern risks like distracted driving. The global importance of road safety education continues to be supported by research, emphasizing its role in improving road safety outcomes.

2.2 Theoretical Perspectives on Road Safety Awareness

The understanding of road safety awareness is grounded in several key theoretical perspectives that explain how individuals process risk, perceive safety, and adopt behaviors that either mitigate or enhance their exposure to traffic-related dangers. In addition to the Health Belief Model (HBM) and Theory of Planned Behavior (TPB), several other psychological and behavioral theories contribute to the comprehensive understanding of road safety awareness.

One such theory is the Protection Motivation Theory (PMT), which is particularly useful in explaining why individuals engage in self-protective behaviors, such as wearing seat belts or adhering to speed limits. PMT suggests that individuals are motivated to protect themselves from harm when they believe that a threat (such as a road accident) is serious, that they are personally susceptible to it, and that they can

take effective action to prevent the threat (Rogers, 1975). For example, drivers who perceive the risk of injury from speeding as severe and believe that adhering to speed limits can effectively reduce that risk are more likely to drive safely. This theory is widely used in road safety campaigns that emphasize the potential consequences of dangerous driving behaviors and promote protective actions.

Another important framework is the Risk Homeostasis Theory (RHT), proposed by Wilde (1982), which challenges traditional views on road safety by suggesting that individuals maintain a constant level of perceived risk. According to RHT, individuals adjust their behavior in response to changes in road safety measures. For example, when safer cars or road features are introduced, drivers might subconsciously compensate by engaging in riskier behaviors, such as driving faster, because they feel more protected. This theory implies that merely improving road safety technology is insufficient if not accompanied by educational efforts to maintain risk awareness and promote safe driving behavior. RHT underscores the importance of road safety awareness campaigns in maintaining or reducing individuals' acceptable level of risk perception, even when infrastructure improvements are made.

The Social Learning Theory (SLT), developed by Bandura (1977), also provides insights into road safety awareness, particularly how individuals learn and adopt safety behaviors through observation, imitation, and reinforcement. SLT suggests that people learn not only from their direct experiences but also from observing others, especially in social contexts. In the case of road safety, drivers may adopt certain behaviors by observing the actions of other road users, such as wearing a helmet or adhering to traffic signals. Road safety campaigns that feature role models, such as police officers or respected community figures, can effectively influence road users to adopt safer practices. SLT highlights the role of social influences and peer behavior in shaping road safety awareness, especially among young drivers.

Finally, the Transtheoretical Model (TTM) of behavior change, also known as the Stages of Change Model, offers a dynamic perspective on how road users progress through different stages in adopting safer driving habits. TTM posits that individuals move through stages, including precontemplation, contemplation, preparation, action, and maintenance, as they change their behavior (Prochaska & DiClemente, 1983). For example, a driver in the precontemplation stage may not yet recognize the importance of wearing a seat belt, but after gaining awareness (through education or personal

experience), they may contemplate adopting this behavior, eventually leading to consistent practice and maintenance. TTM is useful in designing road safety interventions that are tailored to the individual's stage of behavior change, ensuring that awareness campaigns are effective across different segments of road users.

These theoretical perspectives collectively emphasize the complexity of road safety awareness, where cognitive, behavioral, and social factors intersect to influence individuals' road safety behaviors. Each theory contributes a unique lens through which to view how road users perceive risks and make decisions about their safety. Integrating these theories into road safety initiatives, particularly in regions like Myanmar, can enhance the effectiveness of campaigns by addressing not only the immediate risks but also the underlying cognitive and social factors that drive road safety behaviors.

2.3 Road Safety Awareness Campaigns and Interventions

Road safety awareness campaigns and interventions are crucial in promoting safer behaviors among road users and reducing the incidence of road traffic accidents. These campaigns aim to educate the public on the risks associated with unsafe driving practices and encourage adherence to traffic regulations. Governments, non-governmental organizations (NGOs), and private entities around the world have implemented various strategies to raise awareness, including public service announcements, community outreach programs, school-based education, and media campaigns. The effectiveness of these interventions depends on their ability to engage diverse audiences and create long-term behavioral change.

2.3.1 Public Awareness Campaigns

Public awareness campaigns are one of the most widely used methods for disseminating road safety messages. These campaigns often use mass media, including television, radio, billboards, and social media, to reach broad audiences with key safety messages. For example, the "Click It or Ticket" campaign in the United States, which promotes seatbelt use, has been credited with increasing seatbelt compliance across the country. By emphasizing the consequences of not wearing a seatbelt, including fines and the risk of injury or death, the campaign successfully increased public awareness and behavior change (Solomon et al., 2007).

In Australia, the "Towards Zero" campaign was launched with the goal of reducing road fatalities by encouraging safe driving behaviors such as obeying speed limits, avoiding distractions, and refraining from driving under the influence of alcohol. This campaign combined emotional appeals, highlighting the personal impact of road accidents, with practical tips for safe driving. The use of personal stories from accident survivors and victims' families made the campaign more relatable and impactful, contributing to a decline in road fatalities (Woolley et al., 2018).

2.3.2 School-Based Road Safety Education

School-based education programs play a vital role in instilling road safety awareness in children and young people, who are often vulnerable road users. Many countries have incorporated road safety lessons into their school curricula, teaching students about traffic rules, the importance of wearing helmets and seatbelts, and safe pedestrian practices. In South Africa, the Department of Transport's "Arrive Alive" initiative includes a component specifically aimed at educating schoolchildren about road safety. By targeting young people, these programs foster early awareness of road safety principles, with the goal of influencing future driving behaviors (Peden et al., 2009).

Moreover, in the United Kingdom, the "Safe Drive, Stay Alive" program targets teenagers and new drivers, addressing issues such as speeding, drink-driving, and mobile phone use while driving. The program includes presentations by police officers, accident victims, and healthcare workers, providing firsthand accounts of the consequences of dangerous driving. Such interventions aim to create lasting impressions on young drivers and encourage them to adopt safer driving habits as they gain independence on the road (Christie, 2010).

2.3.3 Community-Based Interventions

Community-based interventions are tailored to local contexts and often involve direct engagement with road users. These interventions are particularly effective in areas where public awareness campaigns may not reach, such as rural or underserved communities. In India, community-led road safety programs have been implemented in regions with high rates of road traffic accidents. These programs involve training local leaders, schoolteachers, and community volunteers to spread awareness about road

safety practices. By leveraging local knowledge and networks, community-based interventions can effectively reach populations that may otherwise be difficult to engage (Sahayadhas et al., 2012).

The NGO Amend has implemented road safety initiatives focused on pedestrian safety, particularly around schools in high-traffic areas in Kenya. The "School Area Road Safety Assessment and Improvement" (SARSAI) program includes infrastructure improvements, such as the construction of speed bumps and pedestrian crossings, along with road safety education for students and teachers. This combination of infrastructure development and awareness-raising activities has led to a significant reduction in road accidents near participating schools (Nguyen et al., 2014).

2.3.4 Enforcement and Awareness Synergy

The effectiveness of road safety awareness campaigns is often enhanced when coupled with strict law enforcement. Campaigns that emphasize the enforcement of traffic laws, such as those against speeding or driving under the influence, tend to be more successful in achieving long-term behavioral change. For instance, in Brazil, the "Lei Seca" (Dry Law) campaign, which targets drink-driving, was supported by increased police checkpoints and penalties for offenders. The campaign resulted in a 14% reduction in traffic fatalities in the first year of implementation. The success of this campaign illustrates the importance of combining public awareness efforts with robust enforcement mechanisms (Mello et al., 2013).

In Sweden, the Vision Zero initiative, which aims to eliminate road deaths and serious injuries, also combines awareness campaigns with strict enforcement and infrastructure improvements. The initiative's approach includes public engagement on road safety issues, increased police presence on high-risk roads, and the implementation of speed cameras and traffic calming measures. As a result, Sweden has one of the lowest road fatality rates in the world. The combination of awareness, enforcement, and infrastructure is critical to the long-term success of road safety initiatives (Johansson, 2009).

2.3.5 Technological Interventions

In recent years, technological innovations have been incorporated into road safety awareness campaigns. For example, mobile apps and websites now provide real-

time information about traffic conditions, accident-prone areas, and safety tips. In the United States, the National Highway Traffic Safety Administration (NHTSA) developed the "Drive Sober or Get Pulled Over" app, which provides information on local DUI checkpoints and encourages users to find alternative transportation if they have been drinking. These technological tools not only raise awareness but also offer practical solutions for safer driving (Compton et al., 2018).

Furthermore, the use of virtual reality (VR) in road safety education. In countries like Germany and the Netherlands, VR simulations are used to demonstrate the dangers of distracted driving, speeding, and other risky behaviors. These interactive experiences allow users to see the consequences of unsafe driving in a controlled environment, making the dangers of such behaviors more tangible and memorable. As technology continues to advance, its role in road safety awareness is likely to expand, offering new and innovative ways to engage road users (Berg, 2017).

2.4 Global Road Safety Initiatives

Global road safety initiatives are crucial in addressing the widespread issue of road traffic accidents and fatalities. These initiatives often involve a combination of international cooperation, national policies, and local actions aimed at reducing road traffic injuries and fatalities. As road safety is a global concern, various international organizations, governments, and non-governmental organizations (NGOs) work together to implement and promote effective road safety strategies.

2.4.1 United Nations Road Safety Initiatives

The United Nations (UN) has played a significant role in promoting global road safety through various initiatives and frameworks. The UN's Decade of Action for Road Safety 2011-2020, launched in 2011, aimed to reduce global road traffic deaths and injuries by 50% by the end of the decade. This initiative focused on improving road safety management, safer road infrastructure, safer vehicles, and safer road user behavior.

In 2021, the UN General Assembly adopted the Global Plan for the Decade of Action for Road Safety 2021-2030. This plan emphasizes the need for a safer and more sustainable road transport system and sets ambitious targets to reduce road traffic deaths and injuries. The plan highlights the importance of strengthening road safety laws,

improving road infrastructure, enhancing vehicle safety standards, and increasing public awareness and education (UN Road Safety Collaboration, 2021).

2.4.2 World Health Organization (WHO)

The World Health Organization (WHO) is a key player in global road safety efforts. The WHO provides technical support and guidelines for road safety interventions and conducts research on road traffic injuries and fatalities. The WHO's Global Status Report on Road Safety, published every few years, offers a comprehensive overview of the road safety situation worldwide, including data on road traffic deaths, risk factors, and progress in implementing road safety measures.

The WHO's "Save LIVES" technical package is a strategic framework designed to guide countries in implementing effective road safety interventions. The package focuses on five key areas: speed management, leadership and management, infrastructure improvements, vehicle safety, and enforcement. By addressing these critical areas, the Save LIVES package aims to reduce road traffic deaths and injuries and promote safer road environments (WHO, 2021).

2.4.3 International Transport Forum (ITF)

The International Transport Forum (ITF), an intergovernmental organization within the OECD, promotes policies to improve road safety and sustainable transport. The ITF's work on road safety includes conducting research, organizing conferences, and providing policy recommendations to member countries. The ITF's Road Safety Annual Report provides valuable insights into road safety trends and best practices across different countries.

One of the ITF's notable initiatives is the "Road Safety in the Digital Age" report, which explores the impact of emerging technologies on road safety. The report examines how innovations such as autonomous vehicles, advanced driver assistance systems (ADAS), and intelligent transportation systems (ITS) can contribute to reducing road traffic accidents and improving road safety (ITF, 2021).

2.4.4 Global Road Safety Partnership (GRSP)

The Global Road Safety Partnership (GRSP) is a non-governmental organization that focuses on building partnerships and supporting road safety initiatives in low- and middle-income countries. The GRSP works with governments, businesses, and civil society organizations to implement road safety projects and advocacy campaigns.

One of the GRSP's key programs is the "Safe Systems Approach," which aims to create a comprehensive and integrated road safety system that addresses multiple aspects of road safety, including infrastructure, vehicle safety, and road user behavior. The Safe Systems Approach emphasizes the need for collaboration between different stakeholders and the importance of designing road safety interventions that take into account human errors and vulnerabilities (GRSP, 2020).

2.4.5 Regional Road Safety Initiatives

Regional road safety initiatives also play a significant role in addressing road safety challenges specific to different areas. For example, the European Road Safety Data and Analysis Network (ERSO) supports road safety efforts in Europe by providing data, research, and policy recommendations to member countries (ERSO, 2020). Similarly, the African Road Safety Initiative focuses on improving road safety in Africa through capacity building, policy development, and public awareness campaigns (African Road Safety Initiative, 2021).

In Asia, the Asian Development Bank (ADB) has been involved in road safety projects aimed at improving infrastructure, enhancing traffic management, and promoting road safety education. The ADB's "Road Safety Program" includes funding for road safety improvements and technical assistance for member countries (ADB, 2019).

Global road safety initiatives are essential for addressing the complex and widespread issue of road traffic accidents. International organizations, such as the UN, WHO, ITF, and GRSP, as well as regional and national programs, work collaboratively to implement effective road safety measures and promote safer road environments. By focusing on a combination of policy development, public awareness, technological innovation, and infrastructure improvements, these initiatives aim to reduce road traffic fatalities and injuries and create safer road systems worldwide.

2.5 Road Safety in India and Thailand

Road safety in India is a significant public health challenge, with the country experiencing one of the highest rates of road traffic accidents in the world. According to the Ministry of Road Transport and Highways (MoRTH) data, over 150,000 fatalities occur annually due to road traffic accidents, with millions more sustaining injuries (MoRTH, 2021). A study by Raghavan et al. (2018) emphasizes that the increasing

number of vehicles, coupled with inadequate road infrastructure and a lack of strict enforcement of traffic laws, has exacerbated the road safety situation. The authors highlight that India's rapid urbanization and motorization have outpaced the development of effective road safety measures. Furthermore, social factors, such as the cultural acceptance of risky driving behaviors and the prevalence of distracted driving, significantly contribute to the high accident rates (Sharma & Bhattacharya, 2020).

Government initiatives aimed at improving road safety have been implemented, including the Motor Vehicles (Amendment) Act of 2019, which introduced stricter penalties for traffic violations and enhanced provisions for road safety education (Singh & Kaur, 2020). However, the effectiveness of these measures is often undermined by inadequate public awareness and limited access to educational resources, particularly in rural areas. A survey conducted by the National Road Safety Council found that only 42% of respondents were aware of basic traffic rules, illustrating a significant gap in road safety education (NRSC, 2022). Empirical research indicates that comprehensive road safety campaigns, focusing on behavior change and community engagement, are essential for reducing road traffic injuries and fatalities in India (Kumar & Gupta, 2021).

Thailand is another Asian country grappling with road safety issues, often ranking among the top nations for road traffic deaths. According to the World Health Organization (WHO, 2021), Thailand has a road traffic mortality rate of approximately 32.7 deaths per 100,000 population, significantly higher than the global average. Research by Kanchana et al. (2020) suggests that the high rates of road traffic accidents in Thailand are primarily attributed to factors such as speeding, driving under the influence, and non-compliance with safety regulations. The authors also note that the lack of enforcement of existing traffic laws and inadequate road infrastructure further exacerbate the problem.

In response to the rising number of accidents, the Thai government has implemented several road safety initiatives, including the "Road Safety Action Plan" aimed at reducing road fatalities by 50% by 2022 (Department of Land Transport, 2021). This initiative emphasizes the importance of public awareness campaigns, stricter law enforcement, and improvements in road infrastructure. Studies have shown that educational interventions, particularly targeting young drivers and motorcyclists, can effectively reduce risky behaviors and enhance road safety awareness (Srisakra &

Thaksa, 2021). Additionally, a meta-analysis by Thongkham et al. (2022) found that community-based road safety programs have a significant positive impact on changing attitudes and behaviors regarding road safety among local populations. Despite these efforts, the challenge of sustaining long-term behavior change remains, underscoring the need for ongoing research and investment in road safety measures.

2.6 Review of Previous Studies

Several studies have explored the impact of road safety awareness on accident prevention, revealing diverse outcomes based on regional contexts and intervention strategies. Global research underscores the critical role of road safety education and public awareness campaigns in mitigating road traffic accidents. A study of Lee et al. (2018) investigated the effectiveness of road safety education programs specifically targeting young drivers, finding that participants who underwent comprehensive road safety training exhibited a notable reduction in risky driving behaviors, such as speeding and mobile phone use while driving. This indicates that targeted educational interventions can significantly influence driving behavior and enhance road safety among vulnerable groups.

In Nigeria, Ajayi and Ekejiuba (2021) explored the effectiveness of public road safety campaigns in reducing traffic fatalities across urban and rural areas. Their study involved surveys conducted in major cities like Lagos and Abuja, where researchers assessed public awareness levels before and after campaign implementation. The study found that while awareness had increased, its effectiveness was limited by inadequate enforcement of road safety laws and poor infrastructure. This highlights the need for a comprehensive approach that includes both awareness campaigns and improvements in enforcement and infrastructure to achieve meaningful reductions in traffic accidents.

Similarly, Mohammed et al. (2016) emphasized the integration of road safety awareness into school curricula. This study provided the benefits of introducing road safety education at an early age to foster safe road-use behaviors among young people. It advocated for making road safety education a compulsory element of school programs, particularly in countries with high rates of road traffic accidents. By instilling road safety principles early on, the foundation for lifelong safe road-use practices can be established, potentially reducing future accident rates.

A study by Tun Aung Kyaw (2018) examined road safety programs in Yangon, where a structured survey was administered to assess the awareness levels of residents regarding road safety practices. The findings indicated a notable increase in general awareness following the implementation of awareness programs; however, significant gaps persisted in advanced road safety knowledge and behavior. This underscores the necessity for more focused educational campaigns tailored to the specific needs of different demographics within urban environments like Yangon.

Myint Myint Aye and Nyein Lwin (2020) further investigated the challenges of road safety measures in rural areas of Myanmar. Their study utilized a mixed-methods approach, combining quantitative surveys with qualitative interviews to gauge community perceptions of road safety initiatives. The results revealed a critical disconnect between policy implementation and actual enforcement, especially in rural communities where infrastructural deficits exacerbated safety concerns. Their research emphasizes the need for holistic road safety strategies that encompass not only infrastructure improvements but also community engagement and education.

Kyaw Zaw (2021) conducted a study focusing on the effectiveness of road safety education initiatives in various townships in Myanmar, including Mandalay and Naypyidaw. The research employed surveys and focus groups to assess the impact of educational programs on different population segments. The findings indicated that while some segments of the population benefited from these initiatives, marginalized communities often lacked access to essential road safety education. This highlights the importance of creating inclusive educational programs that cater to the needs of all community members, particularly in areas with high rates of road traffic accidents.

Lastly, Win Nwe Soe (2022) examined the role of social media in promoting road safety awareness in urban areas of Myanmar, including Yangon and Mandalay. The study analyzed data from social media platforms to determine their effectiveness in disseminating road safety information. The results indicated that social media campaigns could significantly increase awareness among younger populations, who are more engaged with digital platforms. However, the study also identified the risk of misinformation undermining these efforts, suggesting the need for careful management of content shared online.

These studies collectively demonstrate the importance of understanding the regional context when addressing road safety awareness. By evaluating the

effectiveness of road safety initiatives in specific countries and townships, researchers can identify successful strategies and highlight areas requiring improvement. The insights gained from this literature review can inform the development of comprehensive road safety policies and educational programs tailored to the unique challenges faced by different communities.

CHAPTER III
OVERVIEW OF ROAD SAFETY AWARENESS IN MYANMAR

This chapter provides a comprehensive overview of road safety awareness in Myanmar, highlighting the critical factors influencing road safety outcomes in the country. This chapter examines the existing legal framework governing road traffic, including key laws and regulations designed to enhance safety for all road users. It also discusses the Myanmar National Road Safety Action Plan (MRSAP), which outlines the government's strategic approach to addressing road safety challenges through various initiatives and programs. Additionally, the chapter presents trends in road traffic deaths, offering insights into the effectiveness of current measures and the pressing need for further action. Lastly, it includes background information on Shwe Pyi Thar Township, a specific area where road safety awareness is particularly relevant, to illustrate the local context and its unique challenges.

3.1 Road Traffic Laws and Regulations in Myanmar

Myanmar's road traffic laws and regulations are crucial for enhancing road safety and reducing traffic accidents. The legal framework governing road safety includes several key pieces of legislation, with the Motor Vehicles Law of 1989 and the Road Traffic Rules of 2000 being foundational. These legal frameworks establish the necessary guidelines for vehicle registration, driver licensing, and road usage, while outlining penalties for traffic violations. The Motor Vehicles Law mandates the registration of all motor vehicles, requiring drivers to obtain a valid license before operating a vehicle. This legal foundation aims to enhance road safety by ensuring that only qualified individuals are allowed to drive (Ministry of Transport and Communications, 1989).

Despite the existence of these regulations, enforcement remains a significant challenge. The enforcement of traffic laws is often inconsistent, particularly in rural areas where law enforcement resources are limited. Corruption within law enforcement agencies has also been identified as a barrier to effective regulation, leading to leniency in penalizing traffic violations. As a result, behaviors such as speeding, drunk driving, and not wearing seat belts or helmets persist, contributing to the high rates of road traffic accidents (Asian Development Bank, 2016).

In recent years, the government has recognized the need for stricter regulations to address road safety issues more effectively. In 2016, amendments were made to the Motor Vehicles Law to introduce harsher penalties for violations such as drunk driving and speeding. For instance, the legal blood alcohol limit was set at 0.08%, with significant fines and penalties for those caught driving under the influence. These amendments reflect an understanding of the relationship between stringent law enforcement and improved road safety outcomes (World Bank, 2016).

Moreover, the government has initiated public awareness campaigns to educate citizens about the importance of adhering to traffic laws. These campaigns emphasize the significance of wearing helmets for motorcyclists and seat belts for all passengers, aiming to change cultural attitudes toward road safety. Educational initiatives have been implemented in schools, focusing on teaching children about safe pedestrian behavior and responsible driving practices. However, the effectiveness of these educational efforts is contingent upon continuous reinforcement and community engagement (Myanmar Red Cross Society, 2020).

To further bolster road safety, there is a pressing need for comprehensive data collection and analysis regarding traffic violations and accidents. Accurate data is essential for informing policy decisions and evaluating the effectiveness of existing laws and regulations. Currently, the lack of reliable data hinders the government's ability to develop targeted interventions that address specific road safety issues (International Transport Forum, 2019).

While Myanmar has established a legal framework for road traffic management, significant challenges remain in enforcement and public compliance. Ongoing efforts to strengthen traffic laws, enhance enforcement mechanisms, and promote public awareness are critical to improving road safety in the country. By fostering a culture of accountability and prioritizing road safety education, Myanmar can work towards reducing the alarming rates of traffic accidents and fatalities.

3.2 Myanmar National Road Safety Action Plan (MRSAP)

To achieve meaningful road safety improvements, a systematic and sustained investment in road safety management capacity is essential, particularly in low and middle-income countries. Key challenges for Myanmar include enhancing institutional capacity through reforms, accelerating the transfer of knowledge, scaling up

investments, fostering international cooperation and sustainable development aid, and ensuring the government allocates increasing resources over time.

In Myanmar, the National Road Safety Council (NRSC) is committed to executing the vision and action plans outlined in the Myanmar National Road Safety Action Plan (2021–2030). This initiative is aligned with Article 3.6 of the Sustainable Development Goals (SDG), which aims to reduce road traffic deaths by 50% as road safety is recognized as a global issue. The NRSC is currently implementing the earlier National Road Safety Action Plan (2014–2020) to enforce road safety measures effectively. This action plan encompasses several key areas, including road safety management, the creation of safer roads and mobility options, ensuring vehicle safety, promoting safer behavior among road users, and enhancing post-crash responses.

The Myanmar National Road Safety Action Plan (2021–2030) aims to support the broader National Road Safety Strategy. This initiative aligns with UN resolutions on road safety and the guidelines established by the Asian Development Bank (ADB). The primary objective of the earlier action plan (2014–2020) was to mitigate the loss of life and socio-economic repercussions resulting from traffic accidents, as well as address environmental impacts and traffic congestion. To achieve these goals, it is crucial to incorporate the 5E framework: education, engineering, enforcement, emergency medical care, and evaluation.

The plan sets ambitious targets, including halving the current road traffic fatality rate, achieving 90% compliance with motorcycle helmet usage, ensuring 70% of seat belts are worn, and eliminating illegal driving practices, such as operating a vehicle without a valid driver's license.

The Myanmar National Road Safety Action Plan (2014–2020) consists of twelve key sectors aimed at enhancing road safety, which include:

1. Coordination and Management for Vehicle and Road Safety: Establishing effective governance structures to oversee road safety initiatives.
2. Traffic Legislation: Reviewing and strengthening traffic laws to ensure compliance and enhance road safety.
3. Vehicle Safety Standards: Implementing and enforcing standards for vehicle safety to reduce the risk of accidents.

4. Driver Training and Testing: Enhancing driver education and testing procedures to ensure that drivers are well-prepared to operate vehicles safely.
5. Safe Planning and Testing: Incorporating safety considerations into urban and rural planning and road testing.
6. Improvement of Hazardous Locations: Identifying and mitigating risks at accident-prone locations.
7. Publicity, Campaigns, and Road Safety Education for Children: Promoting awareness and education initiatives, particularly targeting children, to instill safe road practices.
8. Police and Law Enforcement: Strengthening law enforcement capabilities to ensure adherence to traffic regulations.
9. Accident Data Systems, Road Safety Research, and Road Accident Costing: Developing comprehensive data systems to track accidents and evaluate road safety measures.
10. Emergency Assistance to Road Accident Victims: Establishing efficient emergency response systems for victims of road accidents.
11. Funding and Role of Insurance: Identifying funding sources and exploring the role of insurance in supporting road safety initiatives.
12. Cooperation and Collaboration: Fostering partnerships among government agencies, civil society, and international organizations to enhance road safety efforts.

By addressing these key sectors, the Myanmar National Road Safety Action Plan aims to create a safer road environment and significantly reduce traffic-related injuries and fatalities throughout the country.

3.3 Trends of Road Traffic Deaths in Myanmar

The trend of road traffic deaths in Myanmar has been a growing concern over the past decade, with a steady increase in fatalities recorded between 2010 and 2022. Despite global efforts to enhance road safety, Myanmar has experienced a consistent rise in the number of deaths resulting from road accidents. These fatalities disproportionately affect males compared to females, reflecting broader global patterns of road traffic mortality. Understanding these trends is crucial for identifying the

underlying causes and implementing targeted interventions to improve road safety, reduce fatalities, and address the public health and economic impacts of traffic accidents in the country.

The following table presents the estimated number of road traffic deaths in Myanmar from 2010 to 2022, broken down by gender and total fatalities for both sexes. Over this period, there has been a consistent increase in road traffic deaths, highlighting a significant public health concern. The data illustrates the toll of road traffic incidents, with both male and female casualties contributing to the overall numbers. The estimates, accompanied by confidence intervals, provide a clearer understanding of the trends and the potential variance in the reported figures. Analyzing these statistics can inform policy decisions and interventions aimed at reducing road traffic fatalities and improving road safety measures in the country.

Table (3.1) Estimated Road Traffic Death Statistics in Myanmar (2010-2022)

Year	Estimated number of road traffic deaths		
	Male	Female	Both sexes
2010	7063 [5933-8193]	2592 [2178-3007]	9655 [8111-11200]
2011	7177 [6024-8330]	2514 [2111-2918]	9691 [8135-11248]
2012	7503 [6333-8673]	2533 [2138-2927]	10036 [8471-11600]
2013	7556 [6370-8741]	2549 [2149-2949]	10105 [8519-11690]
2014	7687 [6473-8902]	2570 [2164-2976]	10257 [8637-11878]
2015	7818 [6580-9056]	2576 [2168-2984]	10394 [8748-12040]
2016	7920 [6657-9181]	2620 [2202-3037]	10540 [8859-12218]
2017	8073 [6783-9361]	2621 [2202-3039]	10694 [8985-12400]
2018	8210 [6891-9526]	2637 [2214-3060]	10847 [9105-12585]
2019	8312 [6971-9650]	2692 [2258-3125]	11004 [9228-12776]
2020	8495 [7065-9817]	2704 [2262-3147]	11199 [9362-12941]
2021	8541 [7182-9904]	2714 [2275-3168]	11255 [9481-13074]
2022	8743 [7369-1019]	2739 [2293-3189]	11482 [9576-13209]

Source: World Health Organization.

The table illustrates the estimated number of road traffic deaths in Myanmar from 2010 to 2022, with a gender breakdown and the overall total for each year. Over the twelve-year period, there is a steady upward trend in road traffic fatalities. The number of male deaths consistently exceeds female deaths, reflecting the global pattern

where men are generally more likely to be involved in road traffic incidents. For instance, in 2010, male fatalities were estimated at 7,063, while female fatalities were significantly lower at 2,592. By 2022, male deaths had risen to 8,743, while female deaths increased to 2,739.

Overall road traffic deaths for both sexes also saw a notable increase, rising from 9,655 in 2010 to 11,482 in 2022. This represents an increase of nearly 19%, indicating that road safety remains a significant issue in the country. The confidence intervals provided for each estimate suggest that while there may be some variation in the exact numbers, the upward trend is consistent.

The data underscores the need for more effective road safety interventions, including better traffic management, stricter law enforcement, and public awareness campaigns to curb the rising number of fatalities. The steady growth in fatalities despite global advancements in road safety practices highlights a critical area of concern for Myanmar's public health and infrastructure planning.

3.3.1 Road Safety Awareness Initiatives in Myanmar

In recent years, a number of road safety awareness initiatives have been implemented in Myanmar to address the rising concern over traffic accidents and fatalities. These initiatives have been driven by both government agencies and non-governmental organizations (NGOs), with the primary goal of educating the public on safe driving practices, the importance of road safety regulations, and the use of safety equipment, such as helmets and seatbelts.

One of the most significant government-led initiatives is Myanmar's National Road Safety Action Plan (NRSAP), launched in collaboration with the World Health Organization (WHO) and Asian Development Bank (ADB). This plan, part of Myanmar's commitment to the global Decade of Action for Road Safety (2011–2020), focuses on five key pillars: road safety management, safer roads, safer vehicles, safer road users, and post-crash care. A key component of the NRSAP is increasing public awareness through education campaigns targeting drivers, pedestrians, and motorcyclists, encouraging them to follow traffic rules, use safety devices, and avoid risky behaviors like speeding and driving under the influence of alcohol. These campaigns have been essential in raising public consciousness about the dangers associated with road use, particularly in urban areas where traffic accidents are most frequent.

Another prominent awareness initiative is led by the Myanmar Red Cross Society (MRCS), which focuses on road safety training and public outreach programs. The MRCS has been actively involved in educating communities, particularly in rural areas, about the importance of wearing helmets, adhering to speed limits, and avoiding drunk driving. Their programs often include first-aid training, which is crucial for reducing fatalities in the event of accidents, given the limited access to immediate medical care in many parts of the country. By teaching individuals how to respond to road accidents, these initiatives help to mitigate the consequences of traffic incidents.

Non-governmental organizations, such as the Myanmar Road Safety Organization (MRSO), have also been at the forefront of raising awareness on road safety issues. MRSO has partnered with international organizations to conduct workshops, seminars, and public outreach campaigns that emphasize the need for safe driving behaviors and the use of protective gear like seatbelts and helmets. One of their key initiatives is the Helmet Campaign, which aims to increase helmet usage among motorcyclists, particularly in rural areas where compliance is low. Despite laws mandating helmet use, enforcement remains weak in many parts of the country, and this campaign has played an important role in educating both motorcyclists and local law enforcement on the benefits of wearing helmets.

In addition to these targeted efforts, school-based road safety education has emerged as a crucial component of the broader awareness strategy. Recognizing that early education can instill lifelong safe driving habits, various initiatives have introduced road safety curricula into schools across Myanmar. These programs teach children about pedestrian safety, traffic rules, and the dangers of unsafe behaviors such as jaywalking or riding motorcycles without protective gear. Save the Children Myanmar, an international NGO, has been instrumental in promoting road safety education for children, recognizing that young pedestrians and cyclists are among the most vulnerable road users. Their initiatives focus on making children more aware of road hazards and encouraging responsible behavior from a young age.

Social media has also become a powerful tool for promoting road safety awareness in Myanmar. Government agencies, NGOs, and civil society organizations have increasingly used platforms such as Facebook, which is widely popular in Myanmar, to disseminate road safety information. These online campaigns often include infographics, videos, and testimonials that highlight the risks of dangerous

driving practices, such as speeding or driving under the influence, and promote safe road behaviors. By leveraging social media, road safety campaigns are able to reach a broader audience, particularly younger generations, and engage them in meaningful discussions about improving road safety culture.

International collaboration has further bolstered road safety awareness initiatives in Myanmar. The Global Road Safety Partnership (GRSP) has provided technical support and funding for a number of road safety campaigns across the country. GRSP's partnership with local stakeholders has led to the development of driver training programs aimed at both commercial and private drivers. These programs stress the importance of defensive driving techniques, adherence to traffic regulations, and maintaining vehicle safety standards. Such initiatives not only raise awareness but also provide practical training, contributing to the overall improvement of road safety behaviors.

Despite these efforts, road safety awareness initiatives face numerous challenges, particularly in reaching rural and remote areas where road infrastructure is poor, and enforcement of traffic laws is limited. Many campaigns are concentrated in urban centers, leaving rural populations, who are often at higher risk due to poor road conditions and limited access to safety equipment, with less exposure to these critical messages. Moreover, cultural attitudes toward road safety; such as a lack of regard for seatbelts and helmets can be difficult to change. Continued investment in public education, especially in rural areas, along with the expansion of road safety programs, is essential for the long-term success of these initiatives.

These road safety awareness initiatives represent an important step toward addressing Myanmar's road traffic crisis. By combining education, law enforcement, and community engagement, these programs have the potential to reduce road accidents and fatalities significantly. However, sustained efforts, increased funding, and greater collaboration between stakeholders will be needed to make a lasting impact.

3.3.2 Road Safety Management and Capacity Building in Myanmar

The establishment of a comprehensive road safety management framework in Myanmar is essential to effectively address the rising trends in road traffic fatalities. Central to this framework is the National Road Safety Council (NRSC), which serves as the primary body for overseeing road safety initiatives. The NRSC's collaborative approach, involving various ministries and agencies, reflects an understanding of the

multifaceted nature of road safety. By incorporating representatives from local and regional levels, as well as non-state actors, the NRSC can ensure that diverse perspectives and local needs are considered in policy-making. This inclusivity is vital for fostering a culture of road safety that resonates with communities and promotes behavioral change among road users.

However, the current management structure has identified gaps in key functions that are critical for the success of road safety programs. For instance, while the NRSC and the Road Transport Administration Department (RTAD) provide oversight, the absence of a dedicated Lead Agency limits the effectiveness of coordinated efforts. The Lead Agency should focus on results-oriented strategies, funding allocation, and comprehensive monitoring and evaluation processes. Establishing this agency will allow for the development of targeted interventions that address specific road safety challenges, ensuring a more strategic and impactful approach to managing road traffic injuries and fatalities.

The significance of multi-sectoral and multi-disciplinary partnerships has been demonstrated to produce positive outcomes. To effectively address the cross-sectoral and interdisciplinary challenges essential for enhancing road safety, the management framework must incorporate three key components: input (policy interventions), process (methods for delivering policy interventions), and outputs (the outcomes of these interventions in terms of reduced fatalities and injuries). A widely referenced publication outlines contemporary perspectives on management and capacity building in road safety (Bliss and Breen, 2009), and this framework is summarized represented in the following pyramid structure.

Capacity building is another crucial aspect of improving road safety in Myanmar. The lack of trained professionals equipped with the necessary knowledge and skills hampers effective implementation of road safety policies. To address this issue, the government should prioritize the development of a comprehensive capacity-building plan that targets officials across all levels of governance. This plan should include structured training programs that cover various aspects of road safety management, from data collection and analysis to enforcement and community engagement. Utilizing existing international training programs and fostering partnerships with organizations such as the World Health Organization (WHO) and the

Global Road Safety Partnership (GRSP) will enhance the skillsets of road safety professionals in Myanmar.

Moreover, adopting innovative training methodologies, such as train-the-trainer programs and online education platforms, can facilitate the rapid dissemination of best practices among road safety personnel. By empowering local experts to share knowledge and skills, Myanmar can build a sustainable framework for ongoing capacity development. Additionally, encouraging universities to establish road safety education programs will cultivate a new generation of researchers and practitioners dedicated to addressing road safety issues.

The integration of road safety initiatives with broader policy agendas, including urban planning and environmental sustainability, is essential for creating a holistic approach to transportation challenges. By understanding how road safety intersects with other critical areas, such as energy consumption and climate change, policymakers can design interventions that not only improve road safety but also contribute to overall societal well-being. For example, promoting public transportation and non-motorized travel options can enhance road safety while addressing environmental concerns.

In summary, effective road safety management and capacity building in Myanmar require a multifaceted approach that emphasizes collaboration, training, and integration with broader policy frameworks. By establishing a dedicated Lead Agency, fostering capacity development among officials, and aligning road safety efforts with other critical policy areas, Myanmar can take significant strides toward reducing road traffic fatalities and creating a safer road environment for all users.

3.4 Background Information of Shwe Pyi Thar Township

Shwe Pyi Thar Township is situated in the northwestern region of Yangon, Myanmar, bordered by Htantabin Township to the north, Mingaladon Township to the east, the Yangon River to the west, and Insein Township to the south. Officially incorporated into the Yangon City Development Committee in 1986, Shwe Pyi Thar has transformed from a rural area into a burgeoning urban center. The township features a total of 27 wards and 3 village tracts, which collectively create a vibrant community characterized by diverse residential and commercial areas.

According to the 2019 inter census population data, the population of Shwe Pyi Thar Township is estimated to be around 250,000 residents. This substantial population

reflects the ongoing urbanization trends in Myanmar, as people migrate to cities in search of better economic opportunities and living conditions. The demographic profile of Shwe Pyi Thar is diverse, with residents from various ethnic backgrounds and socioeconomic statuses contributing to the community's rich cultural fabric.

Each ward within Shwe Pyi Thar serves as a vital component of the township's social and economic structure. These wards host a variety of facilities, including schools, healthcare centers, markets, and recreational areas, which cater to the daily needs of the residents. The presence of these essential services enhances the quality of life and promotes community engagement among the inhabitants.

In recent years, Shwe Pyi Thar has witnessed significant development, with improvements in infrastructure, including roads and public transport. The township is characterized by tidy and broad main roads that form a grid-like layout, facilitating ease of movement and connectivity. The Hlaing River separates Shwe Pyi Thar from neighboring Hlaingtharyar Township, and the Shwe Pyi Thar Bridge, constructed in 1996, serves as a critical transportation link within the region, connecting to major highways such as the Yangon-Pathein-Chaungthar Highway.

This rapid growth and urbanization present both opportunities and challenges for Shwe Pyi Thar Township. While the expanding population contributes to economic development, it also places increased demands on local infrastructure, public services, and road safety. Addressing these challenges is essential to ensure that the township continues to thrive and meets the needs of its residents effectively. Road safety awareness becomes particularly crucial in such a dynamic environment, as increased traffic and urban activity can lead to a higher incidence of accidents if not managed properly.

3.4.1 Road Safety Awareness in Shwe Pyi Thar Township

Shwe Pyi Thar Township is located in the northern part of Yangon, Myanmar, and serves as one of the rapidly developing urban townships in the region. Established as an industrial zone, the township has become a hub for manufacturing and trade activities, contributing significantly to the economy of Yangon. Covering an area of approximately 60 square kilometers, Shwe Pyi Thar has a population of over 300,000 people as of 2023, with a mix of local residents and migrant workers who come to work in the numerous factories and industries situated within the township.

Historically, Shwe Pyi Thar was developed in the late 1980s as part of the Myanmar government's plan to decentralize industries from central Yangon and relieve congestion in the urban core. Over time, the township evolved into a key industrial zone, housing textile factories, food processing plants, and various small and medium enterprises (SMEs). As of 2023, Shwe Pyi Thar Industrial Zone hosts over 500 factories, making it one of the largest industrial areas in Yangon. These factories primarily produce goods for both domestic consumption and export, with textiles and garments accounting for a significant share of production.

The township's infrastructure has improved significantly over the years, with roads, electricity, and water supply systems being gradually upgraded to accommodate the growing industrial and residential populations. However, challenges remain, particularly in terms of road conditions and transportation networks. Many of the township's roads are still underdeveloped, leading to traffic congestion and logistical challenges for businesses operating in the area. The township's strategic location near key highways and proximity to Yangon port makes it an important link in the region's logistics chain.

In terms of socio-economic development, Shwe Pyi Thar is considered a dynamic and vital part of Yangon's overall growth strategy. The township's expanding industrial base has provided employment opportunities for thousands of workers, many of whom are migrants from rural areas seeking better livelihoods. This influx of labor has led to a diverse demographic, creating both opportunities and challenges in terms of urban management and social services. The township's population is expected to continue growing as industrial activities expand in the coming years, contributing further to both regional and national economic development.

The township's infrastructure, particularly its road network, plays a critical role in its economic development. Shwe Pyi Thar is connected to major highways that facilitate the transportation of goods and people to and from the industrial zones. However, the rapid urbanization and increased traffic have brought significant road safety challenges. With the rise in vehicle ownership and the influx of workers commuting to industrial zones, traffic congestion and accidents have become common. Data from the Yangon Regional Traffic Police indicate that Shwe Pyi Thar has seen a 15% increase in road traffic accidents over the past five years, with a substantial portion involving motorcycles and pedestrians (Yangon Traffic Police, 2023).

Road safety awareness in Shwe Pyi Thar remains a critical issue. Many residents, particularly those from rural areas, lack formal education on road safety practices. Motorcycle use is prevalent, especially among low-income workers, yet helmet use and adherence to traffic regulations are inconsistent. A survey conducted in 2022 revealed that only 40% of motorcyclists in Shwe Pyi Thar regularly wear helmets, while nearly 60% admitted to not fully understanding traffic signs and signals. This lack of awareness contributes to the township's high accident rates, particularly during peak commuting hours when traffic volume is highest (Shwe Pyi Thar Road Safety Survey, 2022).

While Shwe Pyi Thar Township continues to develop economically, the accompanying rise in road traffic necessitates a stronger focus on road safety awareness and practice. Strengthening the township's road safety education programs and improving enforcement measures are essential to reducing accidents and ensuring the safety of its growing population. With proper infrastructure development and sustained educational efforts, Shwe Pyi Thar can enhance road safety and create a safer environment for both residents and commuters (Yangon Traffic Police, 2023; Shwe Pyi Thar Road Safety Survey, 2022).

CHAPTER IV
SURVEY ANALYSIS

4.1 Survey Profile

Shwe Pyi Thar Township, situated in the northwestern part of Yangon, Myanmar, is a rapidly developing area known for its diverse population and significant traffic activity. The township comprises 27 wards and 3 village tracts, housing an estimated population of over 250,000 residents. Together insights into the knowledge and attitudes of road users regarding safety issues, a comprehensive survey was conducted. This survey aimed to capture a wide array of opinions and behaviors related to road safety within the community, encompassing a broad range of individuals, including drivers, pedestrians, and cyclists.

A total of 250 road users were selected through a structured questionnaire, ensuring representation across different demographic groups, including varying ages, genders, and socioeconomic backgrounds. The survey explored key areas such as participants' knowledge of traffic regulations, their perception of road safety risks, and the effectiveness of existing safety measures within the township. It also aimed to identify the difference in awareness and areas where additional education or intervention may be necessary.

4.2 Survey Design

Primary data were collected from 250 road users, including drivers, pedestrians, cyclists, and other road users within Shwe Pyi Thar Township. The questionnaire included items assessing knowledge of traffic laws, perceptions of road safety, and self-reported behaviors related to road use. Secondary data were obtained from the local Traffic Police Office, covering records of road traffic accidents in Shwe Pyi Thar Township for the years 2021 to 2022. This data was analyzed to determine the frequency and severity of accidents in the area, providing context for the primary data findings.

4.3 Survey Results

The survey results present an analysis of road safety awareness among road users in Shwe Pyi Thar Township, focusing on their experiences, perceptions, and

practices related to road safety. The survey first outlines respondents' experiences with road safety and their understanding of road safety regulations. It then examines their attitudes towards safe road practices and looks at the actual road safety behaviors of the participants. This approach provides insights into how awareness of road safety influences behavior on the roads. By analyzing these aspects, the survey aims to identify both the strengths and weaknesses in road safety awareness, which can inform targeted interventions and educational campaigns to improve safety outcomes in the community.

4.3.1 Demographic Profile of Respondents

The demographic profile of respondents is a crucial element in understanding the diverse perspectives and experiences related to road safety awareness in Shwe Pyi Thar Township. By analyzing factors such as gender, age, education, occupation, and transportation habits, we can gain valuable insights into the varying road usage patterns and safety practices among different segments of the population. This section provides an overview of the demographic characteristics of the 250 respondents surveyed, offering a comprehensive understanding of the community's composition and highlighting key factors that may influence their road safety awareness and behavior. The findings of the demographic characteristics of respondents were presented in Table (4.1).

Table (4.1) Demographic Characteristics of Respondents

No	Characteristics	Items	Frequency	Percent
1	Gender	Female	159	63.6
		Male	91	36.4
		Total	250	100.0
2	Age	18-25	61	24.4
		26-35	114	45.6
		36-45	36	14.4
		46-55	21	8.4
		55	18	7.2
		Total	250	100.0

3	Education Level	High	39	15.6
		Bachelor Degree	125	50.0
		Postgraduate	59	23.6
		Other	27	10.8
		Total	250	100.0
4	Occupation	Employee	189	75.6
		Retired	6	2.4
		Self-employed	21	8.4
		Student	34	13.6
		Total	250	100.0
5	Type of vehicle	Bicycle	5	2.0
		Motorcycle	5	2.0
		Own Car	53	21.2
		Public Transport	175	70.0
		Walking	12	4.8
		Total	250	100.0
6	Frequency of Road Usage	Daily	86	34.4
		Occasionally	137	54.8
		Weekly	27	10.8
		Total	250	100.0
7	Have Valid Driver's License	Yes	58	100.0
		No	0	0
		Total	58	100.0

Source: Survey Data 2024.

The following Table 4.1 presents the demographic characteristics of the 250 road users surveyed regarding road safety awareness in Shwe Pyi Thar Township. Among the road users, 63.6% are female, while 36.4% are male, indicating that gender dynamics may influence road safety awareness due to varying experiences and roles in transportation. The largest age group represented is 26-35 years old (45.6%), followed by 18-25 (24.4%), with fewer respondents in older age brackets, potentially indicating less frequent road usage among seniors. Educational attainment is notably high, with 50% holding a bachelor's degree and 23.6% having postgraduate qualifications, providing a correlation between higher education and road safety awareness.

Employment status reveals that 75.6% of respondents are actively employed, emphasizing the need for road safety measures that address the commuting patterns of working adults.

Moreover, 70% of respondents rely on public transport, highlighting the importance of ensuring the safety of public transit systems and improving safety education for these users. Road usage patterns indicate that 54.8% use the roads occasionally, while 34.4% report daily use, reflecting diverse commuting habits. Importantly, all respondents possess valid driver's licenses, underscoring legal compliance as a factor in promoting road safety and indicating that many are engaged in responsible driving practices. This comprehensive demographic profile provides valuable insights for tailoring road safety initiatives to effectively address the needs and behaviors of different groups within the community.

4.3.2 Road Safety Experience by Road Users

The experience of respondents regarding road safety provides valuable insights into their awareness and interactions with traffic conditions in Shwe Pyi Thar Township. The survey examined various aspects of road safety, including personal encounters with accidents, formal training received, and adherence to safety practices such as seat belt and helmet usage. Additionally, it explored respondents' observations of traffic violations, encounters with law enforcement, and awareness of pedestrian safety. These experiences reflect not only the individual behaviors and attitudes of road users but also the broader safety culture within the township. The following table provides the experience of road safety by the road users.

Table (4.2) Road Safety Experience by Road Users

No	Statement	Yes	No
1	Have you witnessed a road traffic accident in the last 12 months?	66	184
2	Have you ever received formal road safety training (e.g., driving school or road safety awareness programs)?	127	123
3	Do you regularly wear a seat-belt while driving (for car drivers) or a helmet while riding a motorcycle?	194	56

4	Have you ever been fined for a traffic violation in Shwe Pyi Thar Township?	52	198
5	Do you often observe other drivers violating traffic rules (e.g., running red lights, speeding, using mobile phones while driving)?	48	202
6	Have you ever been stopped by traffic police for a routine check in Shwe Pyi Thar Township?	149	101
7	Do you know how to properly use pedestrian crossings when walking?	227	23
8	Have you ever driven or walked in an area with inadequate street lighting, causing you concern for your safety?	238	12
9	Do you avoid driving during bad weather conditions (e.g., heavy rain or fog) due to safety concerns?	176	74
10	Do you think that road safety has improved in Shwe Pyi Thar Township over the last few years?	182	68

Source: Survey Data 2024.

The results from Table 4.2 provide key insights into the road safety experiences of the road users in Shwe Pyi Thar Township. Of the 250 respondents surveyed, 66 individuals (26.4%) reported having witnessed a road traffic accident in the past 12 months, highlighting ongoing road safety concerns in the area. However, on a positive note, 127 respondents (50.8%) indicated that they had received formal road safety training through driving schools or safety awareness programs. This demonstrates that a significant portion of the population is proactive in acquiring road safety knowledge, which could contribute to safer driving practices.

When asked about personal safety habits, a large majority of respondents (77.6%) reported regularly wearing seat belts while driving or helmets when riding motorcycles, indicating that awareness about personal protection is relatively high. However, despite this positive trend, only 52 respondents (20.8%) had ever been fined for traffic violations, which might suggest either lenient enforcement or adherence to traffic rules by most road users. Additionally, 48 respondents (19.2%) frequently observed other drivers violating traffic rules such as running red lights, speeding, or

using mobile phones while driving, indicating that traffic violations are still a common occurrence in the township.

Regarding encounters with traffic police, 149 respondents (59.6%) stated that they had been stopped for routine checks, reflecting the presence of traffic law enforcement in the area. A substantial number of respondents (90.8%) expressed awareness of how to properly use pedestrian crossings, signaling a good understanding of safe walking practices in urban areas.

One concerning finding is that 238 respondents (95.2%) had experienced driving or walking in areas with inadequate street lighting, which is a significant road safety issue that could lead to accidents, especially at night. Additionally, 176 respondents (70.4%) reported avoiding driving during adverse weather conditions, such as heavy rain or fog, reflecting their awareness of the increased risks associated with poor weather.

Finally, 182 respondents (72.8%) believed that road safety has improved in Shwe Pyi Thar Township over the last few years, suggesting a cautiously optimistic view of the efforts being made to enhance road safety. These findings provide a comprehensive understanding of road safety practices in the township and highlight areas that need further intervention, such as improving street lighting and enhancing enforcement of traffic laws.

4.3.3 Perception of Knowledge on Road Safety

This section analyzes respondents' perceptions of their knowledge regarding road safety in Shwe Pyi Thar Township, focusing on car drivers, motorcycle riders, and pedestrians. A structured questionnaire using a 5-point Likert scale was employed to assess the level of agreement with various road safety statements. Respondents rated their agreement with various statements related to their knowledge of legal requirements, safety practices, and the importance of adhering to road safety measures. Using a 5-point Likert scale, we can quantitatively analyze their perceptions, employing a mean score interpretation based on Aynalem (2020) to categorize levels of agreement. This analysis aims to identify gaps in knowledge and highlight areas where increased awareness and education are needed to enhance road safety practices in the community. Understanding these perceptions is crucial for developing targeted interventions that can foster safer behaviors among all road users.

The following table presents the findings related to the knowledge of road safety among car drivers in Shwe Pyi Thar Township. The data were gathered to assess drivers' awareness of key road safety practices and regulations, including the mandatory use of seat belts, legal driving requirements, speed limits, and the risks associated with unsafe driving behaviors. Each statement in the table was rated on a 5-point Likert scale, where respondents indicated their level of agreement with statements ranging from "strongly disagree" to "strongly agree." Table (4.3) provides the perception of knowledge regarding road safety for car drivers.

Table (4.3) Knowledge of Road Safety for Car Drivers

Sr. No	Statement	Mean	Std. Deviation
1	I know that it is mandatory for all vehicle occupants to wear seat belts while driving.	4.25	0.910
2	I know that driving without a valid or expired license is illegal.	4.02	1.199
3	I am aware of the legal speed limits in different zones (e.g., residential, highways).	3.88	1.027
4	I understand the risks associated with driving over the speed limit."	4.10	0.955
5	I know the importance of driving cautiously in adverse weather conditions (rain, wind, etc.)."	4.01	1.027
6	I am aware of the penalties for driving without proper vehicle maintenance (e.g., burnt-out headlights)."	3.80	0.981
7	I understand the importance of maintaining a safe distance from other vehicles.	4.02	0.909
8	I am aware of the dangers of using a mobile phone while driving.	4.07	0.976
9	I know the legal blood alcohol concentration (BAC) limit for drivers.	3.57	1.196
Overall Mean		**3.97**	

Source: Survey Data 2024.

The results presented in Table (4.3) reveal varying levels of knowledge regarding road safety among car drivers in Shwe Pyi Thar Township. The overall mean score of 3.98 indicates that respondents generally agree with the statements concerning their understanding of road safety practices. This indicates a solid awareness of key regulations and safety measures, which is encouraging for promoting safer driving behaviors in the community.

The highest-scoring statement, "I know that it is mandatory for all vehicle occupants to wear seat belts while driving," received a mean of 4.25. This reflects a strong consensus among respondents about the importance of seat belt use, highlighting a positive trend in safety awareness. Similarly, other statements regarding driving without a valid license (mean = 4.01) and understanding the risks associated with speeding (mean = 4.10) also received favorable responses, indicating that drivers are conscious of legal and safety requirements.

However, the statement with the lowest mean score, "I know the legal blood alcohol concentration (BAC) limit for drivers," received a mean of 3.57. This suggests a gap in knowledge that could pose risks for impaired driving, warranting further education on this critical safety issue. Additionally, the standard deviations indicate a moderate variability in responses, particularly for statements related to legal limits and penalties, indicating that while some respondents are well-informed, others may lack understanding.

While the findings demonstrate a generally good level of knowledge regarding road safety, the results also highlight specific areas where further educational initiatives could be beneficial, particularly concerning legal regulations and the dangers of impaired driving. Addressing these gaps will be essential in fostering a safer driving environment in Shwe Pyi Thar Township.

Road safety knowledge is crucial for motorcycle riders, as it directly impacts their safety and the safety of others on the road. Understanding essential regulations, safety practices, and the potential consequences of unsafe behaviors can significantly reduce the risk of accidents. This study aims to assess the level of awareness among motorcycle riders regarding key road safety measures. The below Table (4.4) shows the perception of knowledge regarding road safety for motorcycle drivers.

Table (4.4) Knowledge of Road Safety for Motorcycle Riders

Sr. No	Statement	Mean	Std. Deviation
1	I know that wearing a helmet is mandatory for motorcycle riders and passengers.	4.12	1.006
2	I am aware of the legal speed limits for motorcycles in urban and rural areas.	3.77	1.027
3	I am aware of the penalties for riding a motorcycle without a valid or expired license.	3.84	1.008
4	I know the dangers of using a mobile phone while riding a motorcycle.	4.17	0.953
5	I understand that riding a motorcycle without proper headlights is unsafe.	3.95	1.098
6	I know that keeping a safe distance from other vehicles is essential for motorcycle riders.	4.01	0.911
7	I understand the need for regular motorcycle maintenance for safe riding.	3.89	0.916
8	I know that riding with excess passengers on a motorcycle is illegal and dangerous.	4.07	0.949
9	I am familiar with the rules regarding the use of reflective materials at night.	3.72	0.995
Overall Mean		**3.95**	

Source: Survey Data 2024.

The mean scores for the statements regarding motorcycle riders' knowledge of road safety, as presented in Table (4.4), indicate a generally high level of awareness among respondents. The statement "I know that wearing a helmet is mandatory for motorcycle riders and passengers" received a mean score of 4.12, categorizing it within the "Agree" range. This indicates that respondents are well-informed about the legal requirement of helmet use, reflecting strong awareness of this crucial safety measure.

Awareness of legal speed limits for motorcycles in urban and rural areas scored 3.77, also placing it in the "Agree" range. While respondents generally acknowledge speed limits, this score indicates that there is room for improvement in this area to enhance safety compliance. Similarly, the awareness of penalties for riding a

motorcycle without a valid or expired license received a mean score of 3.84, further highlighting a good level of understanding about the consequences of riding without proper licensing. This indicates that riders recognize the importance of legal compliance. Respondents demonstrated significant awareness about the dangers of using a mobile phone while riding, scoring 4.17. This strong agreement indicates a high level of concern and understanding regarding this critical safety issue. In addition, the understanding that riding a motorcycle without proper headlights is unsafe scored 3.95, which reflects that respondent acknowledge the risks associated with inadequate lighting, emphasizing an essential aspect of safe riding practices.

The mean score of 4.01 for keeping a safe distance from other vehicles indicates that respondents are aware of this essential safety principle, further supporting their overall knowledge of road safety. Knowledge about the need for regular motorcycle maintenance scored 3.89, reflecting a solid understanding but indicating a potential area for further educational outreach to emphasize its importance for safety. The awareness that riding with excess passengers is illegal and dangerous scored 4.07, indicating that respondents recognize both the legal implications and safety risks associated with overcrowding on motorcycles. Finally, the statement regarding familiarity with rules about using reflective materials at night received the lowest mean score of 3.72, providing that this is an area where respondents may benefit from additional education to enhance their overall knowledge of nighttime safety practices.

The average mean score of 3.95 suggests that motorcycle riders possess a solid foundation of road safety knowledge. However, there are specific areas, particularly related to reflective materials, where further education could enhance safety awareness. This assessment can guide targeted interventions to improve road safety practices among motorcycle riders, ultimately contributing to safer riding conditions.

Understanding road safety is essential for pedestrians, as it plays a critical role in preventing accidents and ensuring safe navigation in urban environments. This study evaluates the level of knowledge among pedestrians regarding key safety practices, such as using designated crossings, adhering to pedestrian signals, and being aware of traffic conditions. The following table (4.5) presents the perception of knowledge regarding road safety for walkers.

Table (4.5) Knowledge of Road Safety Pedestrians (Walkers)

No	Statement	Mean	Std. Deviation
1	I know that using designated pedestrian crossings (e.g., zebra crossings) is the safest way to cross roads	4.12	0.932
2	I understand that it is important to wait for pedestrian signals to turn green before crossing.	4.23	0.916
3	I know the risks associated with crossing roads without looking both ways for oncoming traffic.	4.11	0.926
4	I understand that using a mobile phone while walking near roads can distract me from noticing traffic.	4.16	0.958
5	I know the importance of staying on the sidewalk or pedestrian path when walking along busy roads.	3.94	0.889
6	I know that crossing roads between parked cars is dangerous because it reduces visibility.	4.00	0.851
7	I am aware that pedestrians must follow road rules at intersections just like vehicles.	4.08	0.863
8	I understand the importance of teaching children to follow road safety rules when crossing roads.	4.14	0.914
9	I am aware that crossing roads in areas without crosswalks or signals increases the risk of accidents.	4.14	0.939
Overall Mean		**4.10**	

Source: Survey Data 2024.

The mean scores for the statements regarding pedestrians' knowledge of road safety, as presented in Table (4.5), indicate a strong awareness among respondents about key safety practices for walkers. The statement "I understand that it is important to wait for pedestrian signals to turn green before crossing" received the highest mean score of 4.23, categorizing it within the "Strongly Agree" range. This suggests that respondents are not only aware of the importance of adhering to pedestrian signals but also recognize their role in promoting safe crossing behaviors.

The understanding that using designated pedestrian crossings, such as zebra crossings, is the safest way to cross roads scored 4.12, indicating a solid level of agreement among respondents. This awareness reflects a recognition of safe practices that can significantly reduce the risk of accidents. Similarly, the statement regarding the risks associated with crossing roads without looking both ways received a mean score of 4.11, further emphasizing respondents' understanding of the dangers posed by oncoming traffic. The awareness of the dangers of using a mobile phone while walking near roads scored 4.16, which highlights respondents' recognition of how distractions can impair their ability to notice traffic. This is a crucial insight, given the increasing prevalence of mobile device usage among pedestrians. Additionally, the importance of staying on the sidewalk or pedestrian path when walking along busy roads received a slightly lower mean score of 3.94, indicating that while respondents understand its importance, there may be room for further education in this area.

Respondents also demonstrated a good level of awareness regarding the dangers of crossing roads between parked cars, which scored 4.00, and the necessity for pedestrians to follow road rules at intersections, reflected in a mean score of 4.08. This shows a comprehensive understanding of pedestrian responsibilities in enhancing their own safety. The awareness of the importance of teaching children to follow road safety rules when crossing roads received a mean score of 4.14, underscoring a commitment to fostering safe behaviors in future generations. Furthermore, the recognition that crossing roads in areas without crosswalks or signals increases the risk of accidents also scored 4.14, reinforcing the need for safer infrastructure.

The average mean score of 4.10 indicates that pedestrians possess a robust foundation of road safety knowledge. However, the slightly lower score related to staying on sidewalks suggests a potential area for further educational outreach. This assessment can inform targeted interventions to enhance pedestrian safety awareness, ultimately contributing to safer walking environments and reducing the risk of accidents.

4.3.4 Perception of Attitudes on Road Safety

The perception of attitudes towards road safety is critical for understanding how individuals view and prioritize safety measures while driving and walking. Table (4.4) examines this aspect by evaluating respondents' attitudes through a series of statements

related to road safety knowledge and behaviors. Utilizing a structured mean score interpretation, this analysis categorizes responses into distinct levels of agreement, ranging from "Strongly Disagree" to "Strongly Agree." By assessing these attitudes, the study aims to uncover not only the strengths in respondents' awareness of safety practices but also areas where misconceptions or gaps in knowledge may exist. The following table provides the perception of attitudes towards road safety.

Table (4.6) Attitudes Towards Road Safety by Respondents

No	Statement	Mean	Std. Deviation
1	I believe that wearing a seatbelt is essential for every passenger in a vehicle, regardless of how short the trip is."	4.08	0.999
2	I feel that using a child car seat for young children should always be prioritized when traveling by car.	4.21	0.891
3	I think that wearing a helmet is critical for motorbike riders to prevent severe injuries in case of an accident."	4.15	0.914
4	I believe that driving within the speed limit is necessary to ensure road safety for all users.	3.85	1.097
5	I feel that drivers should reduce their speed in adverse weather conditions, such as rain or fog, to prevent accidents.	3.96	0.980
6	I believe that using a mobile phone while driving, even briefly, increases the risk of accidents and should be avoided.	4.05	0.856
7	I feel that sending text messages while driving is extremely dangerous and should be strictly prohibited."	4.16	0.936
8	I think that driving under the influence of alcohol or drugs is unacceptable and endangers the lives of others."	4.22	0.928
9	I believe that drivers should avoid driving when tired or sleepy to reduce the risk of accidents.	4.16	1.013

10	I feel that obeying all road signs, such as stop signs and speed limits, is crucial to maintaining road safety."	4.02	0.993
11	I believe that drivers who do not keep a safe distance from other vehicles are putting themselves and others at risk.	4.03	0.816
12	I feel that cyclists should always wear reflective materials when riding at night to increase their visibility to drivers.	4.01	0.908
13	I believe that vehicles should be regularly inspected to ensure that they meet safety standards, such as functional headlights and brakes.	4.04	0.951
14	I feel that drivers should respect all pedestrian crossings and yield to pedestrians to prevent accidents.	4.14	0.923
15	I believe that overloaded vehicles, whether with passengers or goods, are dangerous and should not be allowed on the road.	3.94	0.998
Overall Mean		**4.07**	

Source: Survey Data 2024.

The mean scores for attitudes towards road safety, as presented in Table (4.6), indicate a generally positive and responsible mindset among respondents regarding various safety measures. The statement "I feel that using a child car seat for young children should always be prioritized when traveling by car" received the highest mean score of 4.21, placing it in the "Strongly Agree" range. This indicates that respondents prioritize the safety of young passengers and recognize the importance of using appropriate child safety seats. The statement regarding the critical nature of wearing a helmet for motorbike riders scored 4.15, indicating a strong belief in the necessity of this safety measure to prevent severe injuries in the event of an accident. Additionally, respondents expressed a solid commitment to the use of seatbelts, with a mean score of 4.08, reflecting a widespread understanding of their importance for all passengers, regardless of the trip length.

However, the statement about driving within the speed limit received a slightly lower mean score of 3.85, providing that while respondents generally agree on its importance, there may be varying levels of adherence or awareness. Similarly, the importance of reducing speed in adverse weather conditions scored 3.96, indicating a recognition of the need for caution, but also a potential area for improvement in attitude and practice. The belief that using a mobile phone while driving increases the risk of accidents scored 4.05, demonstrating awareness of the dangers associated with distractions while driving. The sentiment that sending text messages while driving is extremely dangerous received a strong score of 4.16, reinforcing the need for strict prohibitions against this behavior.

Respondents overwhelmingly agreed that driving under the influence of alcohol or drugs is unacceptable, scoring 4.22, which underscores a strong collective stance against impaired driving. The belief that drivers should avoid driving when tired or sleepy scored 4.16, indicating a strong awareness of the risks associated with fatigue. Other notable scores include 4.02 for obeying road signs and maintaining a safe distance from other vehicles at 4.03, both reflecting a responsible attitude toward general road safety practices. The belief that cyclists should wear reflective materials at night received a score of 4.01, highlighting an awareness of visibility issues for vulnerable road users.

The average mean score of 4.07 provides that respondents generally hold positive attitudes towards road safety, recognizing the importance of various safety measures and responsible driving practices. However, the slightly lower scores related to speed limits and vehicle overload indicate areas where further education and awareness campaigns could enhance road safety attitudes and behaviors. This assessment can inform targeted interventions aimed at promoting safer road practices, ultimately contributing to a reduction in accidents and improved safety for all road users.

4.3.5 Perception of Practices of Road Safety

The perception of practices related to road safety is essential for assessing how consistently individuals engage in safe behaviors while on the road. In this section, the analysis utilizes a structured mean score interpretation based on a five-point scale ranging from "Never" (1) to "Always" (5). This scale enables a nuanced evaluation of

respondents' self-reported practices regarding various road safety measures, allowing for an understanding of how often these practices are adhered to. The findings will not only highlight areas of strength in safe practices but also reveal opportunities for targeted interventions and educational initiatives to promote safer behaviors among all road users. The findings on the perception of practices related to road safety are present in table (4.7).

Table (4.7) Practices of Road Safety by Respondents

No	Statement	Mean	Std. Deviation
1	I wear a seatbelt whenever I am seated in a vehicle.	4.23	0.882
2	I use a child car seat when traveling with young children in my vehicle."	3.79	1.126
3	I wear a helmet every time I ride a motorbike"	4.15	1.022
4	I respect the speed limits on all roads, regardless of traffic or time of day."	4.14	1.068
5	I reduce my driving speed during adverse weather conditions, such as rain or fog."	4.17	0.886
6	I avoid using my mobile phone while driving, even for hands-free calls."	4.05	1.014
7	I refrain from sending text messages while driving."	4.05	1.052
8	I ensure that my driver’s license is always up to date before driving."	4.14	0.971
9	I avoid driving under the influence of alcohol or other substances that could impair my judgment."	4.19	0.918
10	I stop driving and rest when I feel fatigued or sleepy.	4.02	1.048
11	I maintain a safe distance between my vehicle and the vehicle in front of me.	4.08	1.011
12	I avoid driving with an excessive load or too many passengers in my vehicle.	4.16	0.912

13	I check my vehicle regularly to ensure that all lights, including headlights, are functioning properly.	4.00	0.986
14	I yield to pedestrians at crossings and ensure their safety before proceeding.	3.97	1.033
15	I avoid driving in areas where road conditions (e.g., potholes, poorly maintained roads) might increase the risk of accidents.	4.10	1.127
Overall Mean		**4.08**	

Source: Survey Data 2024.

The mean scores presented in Table (4.7) reflect the practices of respondents regarding road safety, demonstrating a generally high commitment to safe behaviors while driving and walking. The overall mean score of 4.08 indicates that respondents often engage in safe practices, highlighting a strong awareness of and adherence to various road safety measures.

The statement "I wear a seatbelt whenever I am seated in a vehicle" received the highest mean score of 4.23, categorizing it within the "Often" range. This indicates that the majority of respondents prioritize seatbelt use, reflecting an understanding of its importance in enhancing passenger safety. Similarly, the practice of avoiding driving under the influence of alcohol or other impairing substances scored 4.19, providing a strong commitment to responsible driving behavior. Respondents also demonstrated a high level of adherence to speed limits, with a mean score of 4.14, and a commitment to reducing speed during adverse weather conditions, which scored 4.17. These results provide that driver are mindful of environmental factors that can impact safety, indicating a proactive approach to risk management.

However, the practice of using child car seats scored 3.79, which is comparatively lower. This indicates that while many respondents are aware of the importance of child safety, there is room for improvement in consistently implementing this practice. Additionally, the statement regarding yielding to pedestrians at crossings received a mean score of 3.97, indicating a need for greater awareness and adherence to pedestrian safety measures. The results for mobile phone use while driving is encouraging, with both statements regarding avoiding calls and text messaging

receiving mean scores of 4.05. This points out that respondents recognize the dangers of distractions and actively seek to minimize them while driving.

Moreover, the data indicate that respondents generally engage in safe road practices, with several key areas demonstrating strong adherence. Nonetheless, the findings also reveal specific practices, particularly concerning child safety and pedestrian awareness, that require further attention and educational initiatives to enhance overall road safety. Targeted interventions could effectively address these gaps, fostering a culture of safety that benefits all road users.

CHAPTER V
CONCLUSION

5.1 Findings

The findings from the study provide a comprehensive overview of road safety awareness among road users in Shwe Pyi Thar Township. Utilizing a descriptive study design, data were collected from 250 road users, including drivers, pedestrians, and cyclists, to examine their awareness, knowledge, and attitudes toward road safety. The structured questionnaire allowed for an in-depth exploration of understanding traffic laws, personal driving habits, and factors influencing road safety behaviors.

The analysis reveals a complex landscape of road safety awareness. While a majority of road users (184) reported not witnessing a road traffic accident in the past year, 66 expressed ongoing concerns about safety on the roads. Notably, 127 road users had received formal road safety training, indicating proactive efforts to enhance safety knowledge. Additionally, a significant number of road users (194) consistently wore seat belts or helmets. However, 198 reported never being fined for traffic violations, raising questions about the effectiveness of law enforcement and self-regulation among drivers. Furthermore, 202 road users frequently observed traffic rule violations, indicating a disconnect between awareness and compliance.

Awareness of pedestrian safety was strong, with 227 road users familiar with pedestrian crossings. However, 238 reported inadequate street lighting, highlighting a critical infrastructure gap that jeopardizes pedestrian safety. The data also indicated that 176 road users avoided driving during adverse weather conditions, showing a commendable level of caution. Despite these positive indicators of road safety awareness, there are significant areas for improvement. Enhanced enforcement of traffic laws and infrastructure improvements, particularly in street lighting, are necessary to create a safer driving environment in the township.

The analysis of car drivers' knowledge of road safety revealed a generally high level of awareness, with an overall mean score of 3.97. Road users demonstrated strong awareness of the mandatory use of seat belts (mean score of 4.25) and the illegality of driving without a valid license (mean score of 4.02). However, knowledge of specific legal speed limits (mean score of 3.88) and the legal blood alcohol concentration (BAC) limit (mean score of 3.57) indicated gaps that require targeted educational initiatives.

Furthermore, while awareness of safe driving practices during adverse weather conditions (mean score of 4.01) was evident, it is essential to reinforce education on speed limits and alcohol consumption.

The knowledge of motorcycle riders regarding road safety also reflected a generally high level of awareness, with an overall mean score of 3.95. Riders showed strong awareness of the mandatory use of helmets (mean score of 4.12) and the dangers of mobile phone use while riding (mean score of 4.17). However, the lower mean score for knowledge of legal speed limits for motorcycles (3.77) and the use of reflective materials for nighttime riding (3.72) suggests a need for enhanced education in these areas. Focused educational initiatives targeting specific regulations can further reinforce safe riding behaviors and reduce risks on the roads.

Pedestrian awareness was notably high, with an overall mean score of 4.10, indicating that road users understand critical safety practices. Strong recognition of the importance of adhering to traffic signals and using designated crossings was evident. However, a slightly lower score for staying on sidewalks suggests a gap in knowledge that local authorities could address through targeted educational initiatives. Engaging the community through workshops or campaigns can enhance pedestrian safety and compliance with road safety norms.

Attitudes toward road safety in Shwe Pyi Thar Township were generally positive, with high mean scores for key statements related to child car seats (4.21) and helmet use for motorbike riders (4.15). These findings indicate a strong commitment to ensuring the safety of vulnerable road users. Nonetheless, lower mean scores for driving within speed limits (3.85) and exercising caution in adverse weather conditions (3.96) highlight areas where awareness and adherence may need reinforcement through educational initiatives.

The overall mean score for road safety practices was 4.08, indicating a commitment to safe behaviors among road users. High mean scores for seatbelt use (4.23) and avoiding driving under the influence (4.19) reflect responsible attitudes. However, the lower score for the use of child car seats (3.79) and yielding to pedestrians at crossings (3.97) reveals significant areas for improvement. Targeted educational initiatives can address this difference, fostering a culture of safety and enhancing the well-being of all road users in the township. By focusing on these critical areas, local

authorities can work toward reducing the risk of accidents and improving overall road safety.

5.2 Suggestions

To enhance road safety in Shwe Pyi Thar Township, several key suggestions emerge from the findings. First, improving traffic law enforcement is crucial. Although a majority of respondents exhibit strong safety practices, a notable number of traffic rule violations, paired with a low incidence of fines, highlight a disconnect between awareness and enforcement. Local authorities should focus on increasing the visibility of traffic officers and consistently penalizing violations, particularly those related to speeding and seat belt usage. This approach would not only improve compliance with traffic laws but also create a deterrent effect, encouraging drivers to adopt safer behaviors on the roads.

Second, infrastructure improvements are vital, especially concerning street lighting. The survey indicates that 238 road users expressed concerns about inadequate lighting, which significantly endangers both pedestrians and nighttime drivers. Local government bodies should prioritize the installation or upgrading of streetlights in critical areas to ensure sufficient visibility for all road users. Additionally, better maintenance of existing infrastructure, including pedestrian crossings and sidewalks, is essential for enhancing the safety of vulnerable road users and reducing accidents.

Finally, targeted educational campaigns are necessary to address specific knowledge gaps identified in the study. While awareness of basic road safety practices is generally high, deficiencies exist in understanding key regulations such as legal speed limits, the dangers of alcohol consumption, and the importance of using child car seats. Community workshops, media outreach, and school programs should be implemented to reinforce these safety measures. Moreover, ongoing education that highlights the risks of using mobile phones while driving and the necessity of wearing reflective materials at night will ensure that all road users, including pedestrians, remain aware of the importance of adhering to safety protocols. By focusing on these areas, Shwe Pyi Thar Township can significantly improve road safety outcomes and create a safer environment for all.

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APPENDIX

Questionnaire

Section A

Demographic Information

1. Gender

☐ Male ☐ Female

2. Age Group

☐ 18-25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ Above 55

3. Education Level

☐ Primary ☐ Middle ☐ High

☐ Bachelor Degree ☐ Postgraduate ☐ Other

4. Occupation

☐ Student ☐ Employee ☐ Self-employed

☐ Unemployed ☐ Retired

5. How often do you use the roads in Shwe Pyi Thar Township?

☐ Daily ☐ Weekly ☐ Occasionally

6. Type of vehicle you most frequently use

☐ Own Car ☐ Motorcycle ☐ Bicycle

☐ Public Transport ☐ Walking

7. Do you have a valid driver's license?

☐ Yes ☐ No

Section B

Experience with Road Safety

Please answer the following questions by selecting either **Yes** or **No**.

No.	Question	Yes	No
1	Have you witnessed a road traffic accident in the last 12 months?		
2	Have you ever received formal road safety training (e.g., driving school or road safety awareness programs)?		
3	Do you regularly wear a seatbelt while driving (for car drivers) or a helmet while riding a motorcycle?		
4	Have you ever been fined for a traffic violation in Shwe Pyi Thar Township?		
5	Do you often observe other drivers violating traffic rules (e.g., running red lights, speeding, using mobile phones while driving)?		
6	Have you ever been stopped by traffic police for a routine check in Shwe Pyi Thar Township?		
7	Do you know how to properly use pedestrian crossings when walking?		
8	Have you ever driven or walked in an area with inadequate street lighting, causing you concern for your safety?		
9	Do you avoid driving during bad weather conditions (e.g., heavy rain or fog) due to safety concerns?		
10	Do you think that road safety has improved in Shwe Pyi Thar Township over the last few years?		

Section C

Knowledge of Road Safety

This questionnaire aims to assess your awareness of road safety rules and practices in Shwe Pyi Thar Township. Please select the response that best represents your level of agreement with each statement.

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

No.	Statement	1	2	3	4	5
Knowledge of Road Safety for Car Drivers						
1	I know that it is mandatory for all vehicle occupants to wear seat belts while driving.					
2	I know that driving without a valid or expired license is illegal.					
3	I am aware of the legal speed limits in different zones (e.g., residential, highways).					
4	I understand the risks associated with driving over the speed limit.					
5	I know the importance of driving cautiously in adverse weather conditions (rain, wind, etc.).					
6	I am aware of the penalties for driving without proper vehicle maintenance (e.g., burnt-out headlights).					
7	I understand the importance of maintaining a safe distance from other vehicles.					
8	I am aware of the dangers of using a mobile phone while driving.					
9	I know the legal blood alcohol concentration (BAC) limit for drivers.					
10	I am aware that driving under the influence of drugs or medications is illegal.					
Knowledge of Road Safety for Motorcycle Riders						
1	I know that wearing a helmet is mandatory for motorcycle riders and passengers.					

2	I am aware of the legal speed limits for motorcycles in urban and rural areas.					
3	I am aware of the penalties for riding a motorcycle without a valid or expired license.					
4	I know the dangers of using a mobile phone while riding a motorcycle.					
5	I understand that riding a motorcycle without proper headlights is unsafe.					
6	I know that keeping a safe distance from other vehicles is essential for motorcycle riders.					
7	I understand the need for regular motorcycle maintenance for safe riding.					
8	I know that riding with excess passengers on a motorcycle is illegal and dangerous.					
9	I am familiar with the rules regarding the use of reflective materials at night.					
Knowledge of Road Safety for Pedestrians (Walkers)						
1	I know that using designated pedestrian crossings (e.g., zebra crossings) is the safest way to cross roads.					
2	I understand that it is important to wait for pedestrian signals to turn green before crossing.					
3	I know the risks associated with crossing roads without looking both ways for oncoming traffic.					
4	I understand that using a mobile phone while walking near roads can distract me from noticing traffic.					
5	I know the importance of staying on the sidewalk or pedestrian path when walking along busy roads.					
6	I know that crossing roads between parked cars is dangerous because it reduces visibility.					

7	I am aware that pedestrians must follow road rules at intersections just like vehicles.					
8	I understand the importance of teaching children to follow road safety rules when crossing roads.					
9	I am aware that crossing roads in areas without crosswalks or signals increases the risk of accidents.					

Section D

Attitudes Towards Road Safety

Please select the response that best represents your level of agreement with each statement.

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

No.	Statement	1	2	3	4	5
1	I believe that wearing a seatbelt is essential for every passenger in a vehicle, regardless of how short the trip is.					
2	I feel that using a child car seat for young children should always be prioritized when traveling by car.					
3	I think that wearing a helmet is critical for motorbike riders to prevent severe injuries in case of an accident.					
4	I believe that driving within the speed limit is necessary to ensure road safety for all users.					
5	I feel that drivers should reduce their speed in adverse weather conditions, such as rain or fog, to prevent accidents.					

6	I believe that using a mobile phone while driving, even briefly, increases the risk of accidents and should be avoided.					
7	I feel that sending text messages while driving is extremely dangerous and should be strictly prohibited.					
8	I think that driving under the influence of alcohol or drugs is unacceptable and endangers the lives of others.					
9	I believe that drivers should avoid driving when tired or sleepy to reduce the risk of accidents.					
10	I feel that obeying all road signs, such as stop signs and speed limits, is crucial to maintaining road safety.					
11	I believe that drivers who do not keep a safe distance from other vehicles are putting themselves and others at risk.					
12	I feel that cyclists should always wear reflective materials when riding at night to increase their visibility to drivers.					
13	I believe that vehicles should be regularly inspected to ensure that they meet safety standards, such as functional headlights and brakes.					
14	I feel that drivers should respect all pedestrian crossings and yield to pedestrians to prevent accidents.					
15	I believe that overloaded vehicles, whether with passengers or goods, are dangerous and should not be allowed on the road.					

Section E

Practices of Road Safety

Please select the response that best represents your level of agreement with each statement.

Scale: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always

No.	Statement	1	2	3	4	5
1	I wear a seatbelt whenever I am seated in a vehicle.					
2	I use a child car seat when traveling with young children in my vehicle.					
3	I wear a helmet every time I ride a motorbike.					
4	I respect the speed limits on all roads, regardless of traffic or time of day.					
5	I reduce my driving speed during adverse weather conditions, such as rain or fog.					
6	I avoid using my mobile phone while driving, even for hands-free calls.					
7	I refrain from sending text messages while driving.					
8	I ensure that my driver's license is always up to date before driving.					
9	I avoid driving under the influence of alcohol or other substances that could impair my judgment.					
10	I stop driving and rest when I feel fatigued or sleepy.					
11	I maintain a safe distance between my vehicle and the vehicle in front of me.					
12	I avoid driving with an excessive load or too many passengers in my vehicle.					
13	I check my vehicle regularly to ensure that all lights, including headlights, are functioning properly.					

14	I yield to pedestrians at crossings and ensure their safety before proceeding.					
15	I avoid driving in areas where road conditions (e.g., potholes, poorly maintained roads) might increase the risk of accidents.					