

**OPEN ACCESS**

SUBMITTED 22 May 2025

ACCEPTED 18 June 2025

PUBLISHED 20 July 2025

VOLUME Vol.05 Issue07 2025

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Future Trends in Traffic Accidents in Iraqi Cities (Najaf As A Model)

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Abstract: Traffic accidents are a topic of widespread interest to scholars in geography, sociology, law, medicine, and economics, due to their social, economic, psychological, and health-related impacts, as well as their multiple other effects. Najaf is one of the Iraqi cities experiencing a consistently high rate of traffic accidents. This is due to neglect and poor road maintenance, in addition to the ever-increasing number of vehicles, rapid population growth, and ongoing migration to the city.

The study aims to predict and identify future trends in traffic accidents in the city by relying on a set of methods that indicate future expectations, the most important of which is the forecast of population growth and the number of cars, and the expansion of the urban transportation network system in the city, and then building strategies for transportation planning and reducing the effects of traffic accidents in the city of Najaf Al-Ashraf.

Introduction: First: Theoretical Framework of the Research

1: The Research Problem

The research problem revolves around the following main question: "Are there future approaches to addressing the problem of traffic accidents in the holy city of Najaf?"

From this question, a set of sub-questions emerge, including:

1. What will traffic accidents be like in the holy city of Najaf in the future, up to the year 2040?
2. What strategies can be used to reduce the problem

of traffic accidents in the holy city of Najaf?

3: The Research Hypothesis:

The research assumes the main hypothesis: There are no traffic accident strategies in the holy city of Najaf, which will lead to future social, economic, and urban impacts, as well as material and human losses.

The secondary hypotheses include:

1. The holy city of Najaf will witness a sharp increase in traffic accidents in the future, due to the increase in the number of vehicles, coupled with the limited capacity of the streets.
2. Strategies for addressing the problem of traffic accidents in the holy city of Najaf include developing solutions that relevant authorities can adopt, which will mitigate the severity of traffic accidents in the future.

4: Significance of the Research:

The importance of the research is highlighted by:

1. Shedding light on future trends for addressing the problem of traffic accidents in the holy city of Najaf.
2. Studying the prediction of the risks of traffic accidents in the city.
3. Providing the results of the study to the relevant authorities, to assist them in taking appropriate measures to mitigate this problem.

5: Research Objectives:

The research aims to:

1. Analyze the prediction of the number of traffic accidents in the holy city of Najaf and study their various repercussions.
2. Propose future strategies and solutions to limit this phenomenon and minimize its negative impacts.
3. Support decision-makers and relevant authorities with accurate information that contributes to the development of more effective policies to reduce traffic accidents.

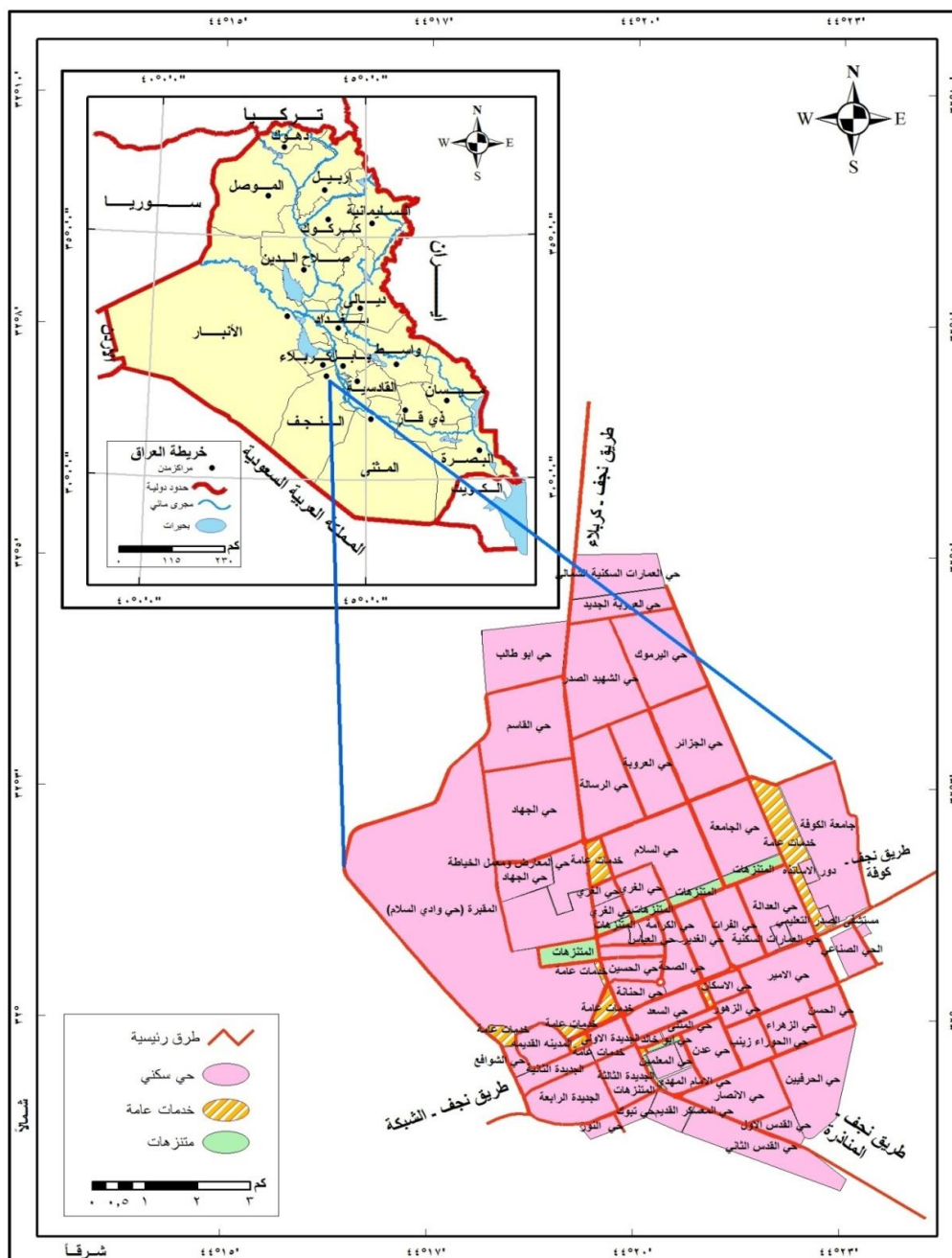
METHODOLOGY

The research methodology adopted a descriptive approach, which included studying the reality of traffic accidents. It also adopted a systems analysis approach, which included a study of the development of traffic accidents in the city of Najaf.

7: Spatial and Temporal Boundaries of the Research

The research area is the city of Najaf, located astronomically between longitudes (19-44) degrees east and latitudes (59-31) degrees north. Geographically, it is the center of Najaf Governorate, bordered to the north by the city of Al-Haidariya (40 km), to the east by the city of Kufa (10 km), and to the southeast by the city of Al-Mundhirah (25 km). See Map (1). Temporally, the research boundaries are defined by the period between 1024 and 2040.

Map (1): Location of the city of Najaf in Iraq and Najaf Governorate



Source: Ministry of Water Resources, General Authority for Survey, map of Iraq at a scale of 1:1,000,000, 2024.

Second: The reality of traffic accidents in the holy city of Najaf:

The issue of traffic accidents has become increasingly prominent among many specialists in traffic safety studies, law, economics, sociology, health, and geography, as they waste a significant portion of time and financial resources and cause a huge loss to the national economy. This problem requires extensive analysis and interpretation due to its multiple causes.

The issue of accidents has gained significant attention among specialists in transportation geography due to its extreme importance, as evidenced by the increase in their rates over the past years. Statistics indicate a continuous increase in the number of traffic accidents in the holy city of Najaf, due to the increase in the number of vehicles. Cars witnessed a noticeable and continuous increase during the period (2004-2024) as the only means of transportation in the city, reaching 106,543 cars, all of which are of all types. These numbers are still increasing due to two important reasons: the increase in citizens' income due to the

increase in employees' salaries, and the lack of a transportation planning policy to determine how cars enter. This has contributed to doubling the rate of traffic accidents in the holy city of Najaf, especially during major religious occasions. It also causes significant environmental damage through increased levels of air and noise pollution, and traffic congestion. This has led to an increase in the rate of traffic accidents recorded on the streets. During the period (2004-2024), the rate of traffic accidents rose to 20,291, including 9,315 injuries, 1,211 deaths, and 9,765 rollovers. This rate is still rising due to the continuous increase in the number of cars and the inability of the streets to accommodate them. Therefore, most traffic accidents are concentrated in the main streets and intersections, as these are the streets and intersections with the most traffic in the city, despite its population reaching 1,221,248 people in 2024. Among the factors that contributed to the increasing rate of traffic accidents in the holy city of Najaf are:

1. The entry of large numbers of vehicles, especially after 2003, led to a significant increase in the number of vehicles on the roads.
2. Road users, both pedestrians and drivers.
3. Some members of the Najaf Traffic Directorate issued driving licenses to persons under the age of 18 due to social connections. This allowed for reckless driving, with no regard for the sudden dangers that might occur on the roads.
4. Most of the cars that entered the city after 2003 are modern models, equipped with all the necessary services, such as television screens. Most of these modern devices cause accidents that can lead to death, as most drivers forget they are driving a car by getting so used to watching television.
5. Old cars contribute to accidents due to sudden breakdowns on the road while driving.
6. Poor street and intersection planning, poor quality paving, inadequate maintenance, and insufficient capacity to accommodate the number of vehicles all contribute to traffic accidents. Some streets and intersections in the city are not planned according to precise, scientific engineering methods.
7. Lack of compliance with traffic regulations and instructions.
8. The lack of a transportation planning policy, as is the case in all countries around the world.

Third: Future Projections for Traffic Accidents in the Holy City of Najaf:

Based on the current data on vehicles and traffic accidents in the Holy City of Najaf, future projections for traffic accidents in the Holy City of Najaf can be

inferred by examining the following aspects:

1: Expectations of an Increase in the Population of the Holy City of Najaf by 2040:

Based on the actual data on the population of the Holy City of Najaf, we note that the city's population will reach 1,899,685 people by 2040. This increase will occur as a result of natural growth, as well as future migration to the city, particularly from rural areas and other neighboring governorates. This will lead to pressure on the urban transportation system, rendering it unable to accommodate the number of vehicles, thus increasing the problem of traffic accidents in the Holy City of Najaf.

* The researcher relied on the forecast equation to estimate the population, which is:

Population of the desired city = City population in a given year $\times$ (2.8%) + Total population of the city in the same year. Note that the population growth rate for the city of Najaf is 2.8%.

Ministry of Planning and Development Cooperation, Central Statistical Organization, Directorate, Babil Governorate Statistics, Statistics and Information Division, 2024.

2: Expected increase in the number of vehicles until 2040.

Since there will be an increase in the population of the city, there will naturally be an increase in the number of vehicles. The number of cars in the city of Najaf is expected to increase based on the per capita share equation, which is one vehicle for every three people, even though the family size in the city exceeds five people. Accordingly, the total number of vehicles in the holy city of Najaf by 2040 will reach 655,423*. This is due to the improvement and rise in the economic income of families in the city and the large number of private companies selling vehicles on installments, especially to employees.

This will lead to significant pressure on the streets, limiting their capacity to accommodate large numbers of vehicles. This will exacerbate the problem of traffic congestion and traffic accidents, especially during rush hour and daily work trips.

*Researcher based on the following equation:

City population for a given year

Estimated number of vehicles = _____

Number of vehicles

Source: Ahmed Yahya Anouz, Spatial Analysis of Transportation and Traffic in the Holy City of Karbala for the Period 2003-2013: A Study in Urban Transport Geography, PhD Thesis, College of Arts, University of Kufa, 2016, p. 214.

3: Expected numbers of tourists and visitors to the holy city of Najaf until 2040.

Given the religious and touristic significance of the holy city of Najaf, large numbers of tourists and visitors are constantly flocking to it, with their numbers set to double. The number of tourists and visitors to the holy city of Najaf is expected to reach 30,600,000 by 2040, both from inside and outside Iraq.

This will make the streets incapable of accommodating the large number of vehicles, negatively impacting traffic accidents and congestion, especially on roads with poor service. Therefore, it is necessary to provide the transportation services required for tourism through organizing and planning to open new roads capable of accommodating the large number of visitors and tourists. This will reduce traffic congestion, accidents, delays, and long waits, especially on main streets that suffer from high traffic volumes. Especially since the number of visitors and tourists reaches 3,000-2,000 on Fridays and Saturdays, and increases during special occasions, reaching 25,000,000 visitors during major religious occasions, in addition to the number of foreign tourists, who reach 4,500.

* The researcher relied on:

The equation for forecasting the number of visitors and tourists according to the World Tourism Organization is as follows:

$$\text{Year} \times \text{Growth Rate} + \text{Previous Year} = \text{Following Year}$$

Where the growth rate is 7% according to World Tourism Organization forecasts.

For more, see: Imad Aziz Mahdi, *The Role of Investments in Religious Tourism in the Holy City of Karbala*, 1. The expansion of residential complexes primarily in the north and northwest of the city, which are the areas with the greatest current and future expansion.

2. The increase in migration rates to the city, with most residents moving from districts and sub-districts to the city. This contributes to rising housing rates and places increasing and sustained pressure on transportation services, thus increasing traffic accident rates.

3. Future expansion and ongoing urban sprawl at the expense of agricultural lands surrounding the city of Najaf. This has led, and will continue to lead, to the emergence of new neighborhoods in the city.

4. Current and future residential expansion. This is aimed at converting agricultural lands into residential areas, particularly in the east and southwest of the city, adjacent to the University of Babylon. However, this expansion is less rapid than in other areas.

This expansion of the city will lead to increased travel

times, which will in turn increase traffic congestion and, consequently, traffic accidents in the city of Najaf.

5: Traffic Forecasts in the City of Najaf until 2040:

Future traffic forecasts in the city are based on two statistical methods, which provide a future picture of the future traffic volume rates passing through the city's street network. These are the trip generation method using growth factors and the trip generation method using multiple linear regression analysis. For ease of application and to provide the necessary data, we relied on the first method, which predicts trips based on the proximity of the area designated for future housing to the trip generation ratio (2). This method was applied to determine the expected trip ratio in Detroit, USA (Bruton, 1987, p. 99). Applying the trip generation method using growth factors revealed that the number of trips generated in the city of Najaf will reach 541,000 trips per day by 2040, which represents a major traffic problem for the city and will consequently create a problem with traffic accidents in the future. —

(*) It was extracted using the following equation:

$$\text{Trip generation ratio (2)} \times \text{area of the area designated for future housing in the city}$$

Number of future trips.

Trip generation ratio

Area of the area designated for future housing in square meters

For more, see: Bruton, Michael J., *Introduction to Transportation Planning*, translated by Dr. Imad Akram Al-Hashemi and Eng. Ramzi Hamdi Sadr Al-Din, Technical Institutes Foundation Press, Baghdad, 1987, p. 99.

Fourth: Strategies for Dealing with Traffic Accidents in the Holy City of Najaf:

Traffic accidents are a matter of concern to people, whether in developed or developing societies. Furthermore, the losses resulting from traffic accidents are significant and varied, as they may be economic, social, or psychological, meaning they include both public and private property. Most traffic accident statistics indicate that those injured in accidents are between the ages of 15 and 29 years old, so the losses are doubled (loss of life in addition to economic losses). The World Health Organization (WHO) estimates that traffic accidents cost approximately 3% of the world's population and are the leading cause of death among adults aged 15 to 29, who constitute the country's productive class. Furthermore, the impact on families can be devastating, as they may result in the loss of their breadwinner or the care of the injured, which can extend over long periods of time. Among the most

important strategies for dealing with traffic accidents in the holy city of Najaf are:

First: Psychological treatment:

Psychological treatment in Iraq does not play a significant role in dealing with traffic accidents, although it is an important part of the measures aimed at mitigating the psychological impact of accidents on those affected, whether they are drivers, passengers, or even witnesses. Accidents not only affect physical and material aspects, but may also leave long-term psychological effects, such as shock, anxiety, and depression. Attention must be paid to emergency psychological support, i.e., immediate intervention after the accident. After a traffic accident, especially if the accident involves injuries or deaths, immediate psychological support must be provided to those affected. It is essential that affected individuals receive long-term individual psychotherapy to deal with the effects of the accident. Treatment can include techniques such as cognitive behavioral therapy (CBT) to help individuals deal with negative thoughts and anxiety, or treatment for post-traumatic stress disorder (PTSD): when people experience severe psychological distress after the accident, this helps the person reflect on the impact of the accident and its effect on their psyche and behavior. This leads to early removal of the effects of the trauma.

There is also a need for psychological rehabilitation for those injured who may suffer long-term psychological effects as a result of accidents. If the accident resulted in severe injury or permanent disability, psychological support must be provided to the injured person to cope with the resulting physical and psychological changes (Al-Ashmawi, 1993, 23). Awareness campaigns should also be launched in the holy city of Najaf to encourage individuals to seek psychological help after accidents. This can be achieved by organizing awareness campaigns to inform Iraqi society of the psychological effects of traffic accidents, reducing the social stigma surrounding psychological treatment, and encouraging those who have experienced accidents to seek help. This can be achieved by using the media (television, internet, advertisements) to promote methods of preventing the psychological effects that can follow accidents, and informing them that psychological treatment is part of recovery. It has been shown that appropriate psychological support reduces the negative psychological effects resulting from accidents, which contributes to improving quality of life and promoting mental health in the holy city of Najaf, and reduces the negative impacts on productivity and the local economy. Therefore, attention to the psychological aspect after accidents is a necessary step towards building a more cohesive and stable society. Second:

Legal Remedies:

Traffic laws play a fundamental role in regulating traffic and reducing traffic accidents in Iraq, including the holy city of Najaf. Legal remedies focus on identifying responsibilities, imposing penalties, compensating those affected, and promoting compliance with safety measures to ensure a safer traffic environment.

According to Article (31) of the law, penalties are increased for violators who cause accidents resulting in: deaths or serious injuries. Penalties range from imprisonment for several years to high fines, depending on the severity of the accident, and significant damage to public or private property. This entails compensation to the state or individuals for the material losses resulting from the accident.

The application of penalties and compensation in accordance with Iraqi law contributes to deterring drivers from committing violations, reducing the rate of accidents and ensuring the protection of the rights of those affected. Furthermore, increasing penalties for serious accidents is an effective means of promoting compliance with traffic rules and achieving a safer traffic environment in the holy city of Najaf and all Iraqi cities (Al-Humaidan, 2006, 327). The introduction of smart monitoring systems in accordance with Iraqi Traffic Law No. (8) of 2019 has also been implemented. Smart monitoring systems are considered a modern tool that helps control traffic violations and enhance public safety on the roads, including in the holy city of Najaf.

In addition, enhancing traffic control with smart signal systems, according to Article (27) of the Traffic Law, regulating intersections using smart signals is a fundamental solution for reducing traffic congestion and improving traffic flow, especially in areas with high traffic density. This reduces traffic chaos that could lead to accidents by regulating priorities between vehicles and pedestrians, and reducing sudden stops, which are a major cause of accidents within cities. The Iraqi Traffic Law emphasizes that the use of modern monitoring systems is part of efforts to achieve a safer traffic environment. However, this is inconsistent with the nature of Hilla. Furthermore, implementing these systems is challenging in Iraq, especially in the holy city of Najaf, leading to an increase in the rate of accidents, which necessitates the imposition of severe penalties to protect people's lives. Drivers are also required to adhere to traffic regulations, such as traffic lights, speed limits, and priority crossings, to reduce accidents and ensure safety. The law also sets strict penalties for violators, including fines, license revocation, and even imprisonment in serious cases. Thus, traffic regulations and legal legislation form an integrated system aimed

at enhancing traffic safety, reducing road risks, and achieving a safe traffic environment in the holy city of Najaf and all Iraqi cities. Legal guidelines and procedures aimed at ensuring driver safety and reducing traffic accidents include defining responsibilities and penalties for violators, providing compensation to those affected, and ensuring the rights of all parties involved in an accident. This is achieved through the application of the law and the punishment of those responsible.

The media must be used as an effective tool to educate drivers about the laws and safety guidelines under the Iraqi Traffic Law. This can be achieved through media programs, such as awareness campaigns on television, radio, and social media. This helps disseminate necessary information about traffic laws, raise awareness of the dangers of reckless driving, and the importance of adhering to safety rules. The media also contributes to raising awareness about the penalties imposed on violators and the importance of cooperation to maintain a safe traffic system. This is an essential part of protecting lives, preserving traffic order, reducing accidents, and ensuring a safe traffic environment for both drivers and pedestrians.

The most prominent of these guidelines include the following:

- Obtaining a valid driver's license after passing both the theoretical and practical tests.
- Adhering to the speed limit and not exceeding the speed limit on various roads.
- Using a seatbelt requires all passengers in the vehicle to wear one, especially in the front seats.
- Avoid using a mobile phone while driving; only headsets or hands-free technology are permitted.
- Driving carefully in adverse weather conditions such as rain or sandstorms.
- Avoid driving under the influence of alcohol or drugs, as severe penalties are imposed on violators.
- Pay attention to pedestrian safety by giving priority to pedestrians, especially in pedestrian crossings or at traffic lights.
- Adhere to traffic signals, whether lighted or manual.

Third: Economic Treatments:

Traffic accidents represent a major challenge affecting the economy of the city of Najaf and Iraq in general, causing significant financial losses that cast a shadow over infrastructure and society. According to statistics from the Iraqi Ministry of Planning for 2021, 10,659 traffic accidents were recorded, resulting in 2,709 deaths, representing 25.4% of the total recorded accidents, reflecting the extent of the human and

material losses resulting from this phenomenon (Al-Humaidan, 2006, 223). To reduce traffic accidents and boost the local economy, it is essential to adhere to traffic laws, pay attention while driving, and perform regular vehicle maintenance. Developing infrastructure, improving lighting, and using modern technologies such as smart signal systems and traffic monitoring are also effective solutions that contribute to reducing the rate of accidents. Implementing these measures will help protect lives and property and enhance the economic stability of the city of Najaf and Iraq in general.

By improving infrastructure, enhancing traffic awareness, and adopting modern technologies in road management, accidents can be reduced, which will positively impact the local economy and support sustainable development in Iraq in general (Al-Amshawi, 1993, 34). Adopting effective economic strategies to address this problem is crucial. These strategies include investing in smart infrastructure, strengthening traffic awareness programs, developing more efficient insurance mechanisms to ensure fair compensation, tightening traffic regulations, and enhancing long-term monitoring to ensure compliance with safety measures.

Economic solutions play a vital role in reducing traffic accidents in the holy city of Najaf. However, achieving this requires an integrated approach encompassing several key aspects, such as developing road infrastructure, strengthening insurance systems, improving healthcare services, and updating traffic laws and regulations to ensure a safer traffic environment. With the increasing rate of accidents and the associated economic losses, both directly through treatment costs and compensation, and indirectly through the impact on productivity and development, addressing this problem from an economic perspective becomes essential. Investing in traffic safety and modern infrastructure not only contributes to protecting lives but also enhances economic and social stability in Hillah, which positively impacts society as a whole. (Al-Mutair, 2006, p. 33)

Insurance is an important economic tool that helps mitigate the financial impact of traffic accidents. It also directly impacts the economy by regulating risks and reducing financial losses. Compulsory insurance is a type of insurance imposed by the competent authorities on vehicle owners, which must be obtained before operating a vehicle. The primary objective of this insurance is to protect the rights of parties harmed in traffic accidents. It obligates insurance companies to financially compensate those affected, rather than burdening the person responsible for the accident with all the costs (Al-Bayati, 2010, p. 45). This system is

considered an effective tool for achieving social justice, as it ensures victims receive prompt and fair compensation without having to resort to courts or engage in lengthy legal disputes. Furthermore, compulsory insurance enhances confidence in the insurance sector by providing financial protection for society and reducing disputes between affected parties (Mansour, 2007, p. 63).

Insurance is considered a tool for reducing economic losses, as the huge financial losses caused by accidents cause a deficit in the economy due to repair costs, injury compensation, and medical expenses. However, vehicle insurance helps distribute these costs among the insured, reducing the financial burden on individuals and the state and contributing to economic stability (Wael, 2002, p. 10).

Street infrastructure plays a pivotal role in influencing the national economy, whether by reducing or increasing financial burdens. In the holy city of Najaf, improving and maintaining roads can help reduce accidents caused by infrastructure defects such as potholes and landslides, reducing physical and material damage and thus limiting repair and treatment costs. Providing clear and effective traffic signals also helps regulate traffic and reduce accidents, leading to lower associated costs. Iraq, particularly Najaf, needs to strengthen traffic safety awareness campaigns, as adherence to traffic rules and safe driving are key factors in reducing accident rates, which have positive economic impacts. Reducing accidents through awareness helps reduce economic costs associated with healthcare, car repairs, and insurance claims, alleviating financial burdens on individuals and the state and enhancing the city's economic stability. Fourth: Planning Solutions:

Planning solutions for traffic accidents in the holy city of Najaf include a set of strategies and measures aimed at improving traffic safety and reducing accidents through organizing and designing the physical environment, as well as enhancing traffic awareness and education. These include the following:

1. Improving and Developing the Street Network. Improving the infrastructure in the holy city of Najaf, like other Iraqi cities, requires developing and improving the street network through implementing periodic maintenance programs aimed at repairing potholes and eliminating unidentified bumps that could lead to accidents (Jaber, 2011, p. 16). Improving the quality of the street surface directly contributes to reducing accidents resulting from its deteriorating condition. Widening streets and avenues is an effective solution for alleviating traffic congestion, especially in vital areas of the city. With the increasing number of

vehicles, it becomes necessary to develop the infrastructure and enhance traffic safety, which contributes to reducing the risks resulting from driving in unsafe conditions. 2. Improving intersections and traffic systems in the holy city of Najaf. Intersections and junctions are vital points that directly impact traffic flow. Therefore, it is essential to redesign these intersections to ensure improved vehicle flow and reduced congestion, especially in areas with high traffic density. This can be achieved by constructing overpasses and tunnels that reduce vehicle interference, contributing to lower accident rates and enhancing public safety.

1. The introduction of smart traffic signal systems is an important step toward developing the city's infrastructure. Based on traffic analysis and congestion levels, they contribute to improving vehicle flow and reducing accidents resulting from sudden stops or unclear signals, enhancing the efficiency and safety of Najaf's streets.

2. Najaf requires an integrated planning approach to address traffic challenges and reduce accidents. This includes developing infrastructure by improving road quality, widening streets, and enhancing lighting to ensure a safer traffic environment. Improving traffic management by regulating intersections, providing alternative routes, and adopting smart signal systems is also essential to reducing congestion and accidents. In addition, legislation must be developed and strict vehicle safety standards enforced, along with enhanced training and awareness programs for drivers and pedestrians. The integration of modern technologies, such as smart monitoring systems and data analysis, contributes to improving accident response and prevention. Implementing these integrated measures not only saves lives but also reduces the economic burden resulting from traffic accidents, achieving sustainable development for Najaf. 3. Identifying and Analyzing Traffic Accident Areas in the City of Najaf. Traffic accidents represent a major challenge in the city of Hillah, necessitating an analytical approach to identify high-risk areas and take the necessary measures to reduce them (Mansour, 2007, p. 127). By collecting and analyzing accident data, locations with frequent accident rates can be identified and effective solutions developed, such as improving night lighting, adding protective barriers, or modifying road designs to enhance traffic safety. A smart monitoring system is an essential tool for improving traffic management in the city. Surveillance cameras and sensors can be used to monitor accidents and potential hazards in real time, allowing relevant authorities to take prompt corrective action and reduce the likelihood of further accidents, thus improving road safety in the city of Najaf.

4. Improving Street Lighting in the City of Najaf. Good lighting is an essential element in enhancing traffic safety in the city, especially in areas with heavy traffic. Providing adequate road lighting contributes to improving visibility at night, helping drivers and pedestrians avoid hazards and reducing the likelihood of nighttime accidents. Smart lighting systems can be adopted that automatically adapt to street conditions, increasing lighting intensity in congested or high-risk areas. This approach helps improve energy efficiency while ensuring adequate lighting levels, enhancing road safety at all times.

5. Organizing and using alternative roads is essential in the city of Najaf, especially when major traffic accidents occur. The availability of alternative routes helps alleviate traffic congestion and prevent bottlenecks that could increase the likelihood of further accidents. Therefore, effective traffic plans should be developed to quickly direct vehicles toward alternative routes while providing clear guidelines to ensure smooth traffic flow.

Fifth: Cultural Treatments:

Traffic culture is an essential element in reducing accidents and enhancing road safety. Community awareness and adherence to traffic laws contribute to reducing risks and ensuring a safer traffic environment. To achieve this, integrated awareness strategies must be adopted that include education, media, and community initiatives. 1. Promoting traffic culture through education and incorporating traffic safety concepts into school curricula, to educate students on the basics of safe driving and adhering to traffic signals, and organizing training courses for new drivers to familiarize them with traffic rules and the importance of adhering to warning signs and holding awareness competitions in schools and universities to promote the concept of safe driving among young people. Media and its role in spreading traffic culture through awareness campaigns on television, radio, and social media (Abdul Qader, 2020, p. 54) that focus on the dangers of excessive speed, reckless driving, and the importance of wearing a seatbelt and producing documentaries and awareness programs that highlight the impact of traffic accidents on individuals and society, and the importance of respecting traffic laws and publishing interactive digital content on social media platforms, such as short videos and illustrations about the most serious traffic violations.

1. Mosques and cultural centers can play a prominent role in spreading awareness about the ethical responsibility of safe driving. This can be achieved through sermons and awareness lectures, and through organizing workshops and seminars in cooperation with

civil society organizations to educate citizens about the importance of adhering to traffic rules. Community initiatives such as "The Ideal Driver" can be launched, rewarding committed drivers and highlighting positive behavior (Al-Shamaileh, 2009, 143).

2. Honoring drivers who adhere to traffic laws through campaigns and awards, which encourage others to adopt correct behaviors and promote the concept of defensive driving, which relies on caution and anticipating risks to avoid accidents. This can be achieved through awareness campaigns and training workshops, and organizing awareness initiatives in public places such as parks, markets, and shopping malls, to deliver direct messages about the importance of adhering to traffic rules.

3. The importance of strengthening partnerships between government agencies, educational institutions, and media institutions to spread the culture of traffic safety more widely, updating training curricula in driving schools to include the latest safe driving techniques, and expanding the use of road signs and awareness posters on streets and in public places to enhance the awareness of drivers and pedestrians (Al-Arabi, 2011, p. 16).

4. Promoting traffic culture contributes to reducing accident rates, protecting lives, and reducing the economic costs associated with injuries and material losses. By combining education, media, and community initiatives, the city of Hillah can become a model for achieving a safe and disciplined traffic environment, contributing to promoting stability and development in Iraq.

RESULTS AND RECOMMENDATIONS

Results:

1. Traffic accidents are a serious problem, causing a (3%) increase in the number of deaths, with more than (3) thousand people dying in 2024 across Iraqi cities, including the holy city of Najaf. 2. The highest month recorded for traffic accidents is September, with an accident rate of 10.1%. This is due to the start of school and daily school trips.

3. Most accidents occur on the city's main streets, as these are more exposed to vehicle traffic and are also more prone to various land uses.

4. Traffic accident rates will significantly increase in Najaf by 2040 due to the high population growth rates, population distribution, and trends, as well as the increase in the number of cars due to improved purchasing power, which allows for car ownership. A family's share will be more than one.

5. Street maintenance work is a cause of traffic accidents, causing traffic congestion and sudden

closures of some streets in the city.

6. Traffic accidents are most common in the city during September, which coincides with the start of school and university days. Moreover, the most common time for accidents is during the morning rush hour, when the work day begins, and the second peak hour, when the work day ends.

Recommendations:

1. Enact laws and regulations that will reduce traffic accidents, as penalties for violators must be increased.
2. Emphasize the use of seat belts and prohibit the use of mobile phones while driving.
3. Conduct periodic technical inspections of vehicles to ensure their suitability for safe driving.
4. Adhere to traffic rules and priorities.
5. Avoid driving while under the influence of extreme fatigue and exhaustion.
6. Establish a modern road network that accommodates the number of vehicles and their potential future increase.
7. Prepare streets and equip them with sidewalks, lighting, traffic signs, signals, and digital thermal cameras to detect traffic violations that could lead to traffic accidents.
8. Establish controls, a plan, and a policy for importing cars, and scrap old models by following a plan developed by the Ministry of Planning.
9. Driving licenses should only be granted to those over the age of 18, who must complete rigorous driving courses to qualify for driving.
10. Strengthening the skills of some traffic police personnel by enrolling them in courses designed to improve their performance and enhance their experience.

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