

An Analysis of the Increasing Rates of Road Accidents on Highways of Balochistan

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Abstract

Road traffic accidents have turned out to be substantial public health and socioeconomic problems in Pakistan, mostly in Balochistan where widespread terrestrial spaces, insufficient transportation frame, hard environment, as well as growing vehicular movements play its part to an unreasonably extraordinary number of transportation accidents. Public roads for example the N-25, N-50, N-40, and N-70 function as tactical transport passages linking Balochistan with other provinces as well as adjacent states; but these roads have seen a continuous rise in highway calamities over the previous 10 years' time. This research paper examines the growing ratios of road accidents on the highways of Balochistan utilizing qualitative content analysis of secondary data gained from governmental reports, global organizations, articles, and official policy documents. The study reveals that to reduce highway calamities in Balochistan needs incorporated involvements comprising structure transformation, firmer transportation law enforcement, enhanced driver schooling, and enhanced collaboration. Applying above-mentioned actions would perform its significant role for viable transport, local economic development, as well as the attainment of nationwide and worldwide highway security goals.

Keywords: Road traffic accidents, Balochistan, highways, road safety, transportation, socioeconomic impacts, Pakistan, traffic management

1-Introduction

In underdeveloped states the ratio of highway casualties are enormously higher than developed states (Graham, 1993, Söderlund and Zwi, 1995, Mohan, 1998, Roberts, 1998). Their rate is more common between ages 5 and 55, comprising the financially active or theoretically active populace, which has effects on the economy and on individuals, family as well as community progress. Furthermore, as the amount of vehicle calamities in an area rises, there is likewise a rise in the death of youths. For males in productive ages, it is reflected to be the third most significant reason of death in emerging states, after AIDS and tuberculosis (Goldsmith and Cwikel, 1993: Secretaría de Salud, 1996).

Various researches find aspects playing the role death or to the significance of harms causing from motorized accidents (Hijar et al., 1996), which as follows: driver associated, automobile associated, ecological settings as well as the physical atmosphere anywhere these happen. Yet, in Pakistan, there are no researches for the assessment of aspects, which might favor or decline the danger of highway accidents.

Highway transport is the main way of customer and cargo movement in country and performs a crucial part for supporting economic development, local incorporation, as well as communal connectivity. The

national highway network links main towns, trade centers, border crossings, and ports, assisting local trade other than global trade. In Balochistan, public roads are predominantly significant owing to the province's massive terrestrial area, dispersed settlements, and partial railway structure. Main roads comprising the N-25 (Karachi–Quetta–Chaman), N-50 (Quetta–Zhob–Dera Ismail Khan), N-40 (Quetta–Taftan), and N-70 (Rakhi Gaj–Fort Munro–Dera Ghazi Khan) serve as important transport passages connecting Balochistan with the rest of country as well as neighboring states for example Afghanistan and Iran. In spite of their strategic significance, these roads experience a continuous rise in highway traffic accidents over recent years. Deadly crashes including customer coaches, commercial Lorries, oil trucks, as well as private cars happen regularly, resulting in considerable loss of life, permanent disabilities, and important financial costs. Highway traffic damages signify a main worldwide public health challenge. In relation to the World Health Organization (WHO), about 1.19 million individuals perish every year because of highway traffic accidents, though between 20 and 50 million individuals suffer non-fatal wounds, many of whom experience lasting frailties (World Health Organization (WHO), 2023).

Highway traffic damages stay the prominent reason of death among persons aged 5–29 years, placing considerable stress on healthcare structures and domestic markets. In addition, low and middle-income states comprise almost 92% of worldwide highway losses, in spite of owning merely about 60% of the world's registered vehicles (WHO, 2023). Pakistan experiences identical problems. Fast development, growing motorization, insufficient structure advancement, fragile implementation of transportation principles, as well as insufficiencies in post-crash emergency care have played its role to increasing highway traffic accidents generally. In relation to the WHO (2023), Pakistan carries on to face an extraordinary burden of highway traffic mortality in relation to several states with similar stages of economic development. National studies have constantly highlighted speeding, drivers' carelessness, overloaded commercial transportation, dangerous overtaking, poor vehicle maintenance, as well as insufficient highway engineering as main causes of traffic accidents (Nazir et al., 2016).

Atmospheric environments more aggravate highway security hazards through the province. Thick winter smog around Quetta, Kuchlak, Bostan, Saranan, as well as nearby parts considerably decreases visibility, whereas seasonal rain, flash floods, sand storms, as well as landslides make risky driving settings on main roads. Combined with dangerous driving manners as well as poor highway manufacturing, these environmental settings play the role to escalated accident occurrence as well as severity (Theofilatos & Yannis, 2014). The World Bank has stressed that highway traffic damages decrease domestic output, rise poverty, and hamper viable economic development, predominantly in low and middle-income states (World Bank, 2019).

1.2 Problem Statement

Highway traffic calamities have proved out to be the utmost constant public health and transport challenges in Pakistan, with Balochistan facing an excessively extraordinary load owing to its massive terrestrial part, widespread road net, rocky land, as well as partial transport structure. In the past 10 years' time, the number of highway traffic accidents, mortalities, as well as grave casualties recorded on the Balochistan's main public roads. The condition in province is mainly disturbing since the province serves as Pakistan's entry to regional trade through Afghanistan and Iran. (Asian Development Bank, 2019). Human behavior additionally complexes the infrastructure lose. Many researches carried out in country have found extreme speeding, irresponsible overtaking, unfocused driving, driver tiredness, overfilling of commercial automobiles, insufficient motorist training, poor automobile maintenance, as well as violations of traffic rules as main backers to highway calamities (Nazir et al., 2016). Thus, the current research aims to examine the growing rates of highway accidents on the public roads of Balochistan by creating confirmation from secondary sources through qualitative content analysis. By classifying the main behavioral, infrastructural, ecological, as well as official dynamics related with highway accidents, the research attempts for providing evidence-based recommendations that may help legislators, transport experts, as well as public health institutes in making complete highway security policies capable of decreasing accidental ratios and their socioeconomic significances in Balochistan.

1.3 Research Objectives

The basic objective of this research was to examine the growing rates of highway accidents on the public roads of Balochistan also inspect the aspects backing their happening as well as their socioeconomic consequences.

Specific Objectives

1. To find the main causes performing the role to the growing ratios of highway calamities on the main roads of Province.
2. To inspect the results of highway structure, traffic administration structures, as well as ecological settings on the rate of highway accidents.
3. To assess the socioeconomic effects of highway accidents on people and their families, societies, as well as the economy of province.

3. Literature Review

Highway traffic accidents have proved out to be the record widely researched public health and transport subjects owing to their important effects for human life, economic growth, as well as community welfare. The current writings demonstrate that highway accidents create as of a compound collaboration of human behavior, highway structure, automobile states, ecological issues, official flaws, as well as disaster reaction capacity. In underdeveloped states, where fast development as well as motorizations has outperformed enhancements in transportation structure and highway security organization, the load of highway traffic damages continues to increase (World Health Organization [WHO], 2023).

Global Perspective on Road Traffic Accidents

Highway traffic damages continue one of the prominent reasons of deaths internationally. In relation to the World Health Organization (2023), about 1.19 million individuals expire yearly in highway traffic accidents, whereas between 20 and 50 million individuals withstand non-fatal wounds, many of which result in lasting frailties. The WHO additionally states that highway traffic damages create the prominent reason of death among persons aged 5–29 years, stressing their considerable influence on economically dynamic inhabitants. In spite of important developments in highway security attained by rich states through manufacturing improvements, bright transport organizations, as well as severe law implementation, almost 92% of worldwide highway mortalities happen in economically poor states (WHO, 2023).

Road Traffic Accidents in Pakistan

Pakistan faces a sturdy rise in motor vehicle ownership in the earlier 20 years' time. Nevertheless, developments in highway structure, traffic organization, as well as driver schooling have not had speed by this fast development in motorization. Therefore, highway traffic damages remain to execute significant health and financial loads in the state. Nazir et al. (2016) contend that dangerous driving behavior, speeding, insufficient driver licensing schemes, bad vehicle maintenance, loaded commercial transportation, as well as fragile implementation of traffic guidelines continue the main backers to highway calamities in state.

Bachani, Ghaffar & Hyder, (2011) likewise found that highway traffic damages establish one of Pakistan's most ignored public health issues since authentic accident scrutiny schemes continue to be lacking in many institutes. Their research stresses that paucity in data gathering; disaster medicinal facilities, as well as trauma care confound attempts to frame evidence-based highway security strategies. The writers additionally concluded that enhanced scrutiny schemes and sturdier official organization are vital for decreasing accident-associated mortalities.

Highway Infrastructure and Road Security

Highway structure has constantly been found to be as a main cause of traffic security. In relation to the Asian Development Bank (2019), Pakistan's transportation structure experiences significant trials since growing

traffic measurements have surpassed the policy capability of numerous countrywide roads. Single-carriageway highways, worsened roadway, insufficient drainage organizations, inadequate road signage, bad light, as well as lack of medium barricades meaningfully upsurge the likelihood of face-to-face accidents and rollover accidents.

Atmospheric and Ecological Elements

Ecological settings meaningfully affect highway security by influencing driver visibility, vehicle stability, as well as highway surface circumstances. Theofilatos and Yannis (2014), with a complete examination of global writings, conclude that rain, dense smog, snowfall, heavy storms, as well as reduced visibility considerably raise accidents rate as well as severity. These ecological results turn into mainly marked once united with undue promptness, worsened highway faces, as well as poor road cares.

Balochistan owns distinctive ecological experiences owing to its rocky land, seasonal dust rainstorms, thick winter smog, flash deluges, as well as great temperature differences. The Pakistan Meteorological Department documents many smog events around Quetta and nearby regions in winter months, considerably decreasing road visibilities as well as growing transport vulnerabilities (Pakistan Meteorological Department, 2023). Similarly, dust storms happening in central and western Balochistan often influence driver visibilities and play its role to stark accidents on main roads.

Socioeconomic Effects of Highway Traffic Accidents

Bachani, ghaffar & Hyder, (2011) likewise stated that disastrous healthcare expenses related with highway traffic harms often drive Pakistani families into longstanding poverty. Victims facing enduring disabilities often need constant rehabilitation as well as community aid, employing extra economic stress on both households and governmental healthcare organizations. These results strengthen the rising credit that highway security ought to be recognized a significant progress matter instead of merely a transport concern.

4. Research Methodology

4.1 Research Design

This research paper employs a qualitative research design relies wholly upon secondary data to examine the growing rates of highway accidents on the main roads of Balochistan. A qualitative design was considered suitable since the research attempts to inspect current evidence, classify recurrent trends, as well as understand the fundamental behavioral, infrastructural, ecological, and official features playing the role to highway traffic accidents instead of gathering primary data from respondents.

4.2 Research Approach

The research paper adopts a qualitative content analysis method. Content analysis is a methodical study method utilized to understand written facts by classifying recurrent subjects, perceptions, associations, as well as trends in available papers (Krippendorff, 2019).

4.3 Data Collection Procedure

The research paper conducts secondary data collection through a logical assessment of available writings as well as official papers. Pertinent journals were used utilizing electronic catalogs comprising Google Scholar, PubMed, as well as official sites of the WHO, World Bank, Asian Development Bank, National Highway Authority, National Highways and Motorway Police, Pakistan Bureau of Statistics, and Pakistan Meteorological Department.

4.4 Data Analysis Technique

The gathered papers were examined by utilizing thematic qualitative content analysis.

5. Results and Discussion

The following significant themes emerged in the light of analysis.

Theme 1: Human Elements as the Main Reason of Highway Accidents

The examination shows that human behavior is the utmost important issue playing the role to the growing amount of highway calamities on the roads of province. Nearly all studied documents constantly classify extreme speeding, irresponsible overtaking, unfocused driving, driver tiredness, desecration of traffic rules, as well as insufficient professional driver training as the primary reasons of traffic accidents. Commercial transporters roaming extensive distances on roads for example the N-25, N-50, N-40, as well as N-70 often labor for long periods without enough breaks. Exhaustion considerably decreases response time, damages decision-making, and upsurges the likelihood of severe accidents. (Klair & Arfan, 2017; Nazir et al., 2016).

Theme 2: Insufficient Highway Structure

The second leading theme is about the paucities in road structure. The studied writings consistently demonstrate that several roads in province were first made for significantly lower traffic capacities than they presently provide. Growing cargo transport related with local trade, mining activities, and commercial development has considerably surpassed the design capability of some roads, mainly the N-25 and N-50 (Asian Development Bank, 2019).

Theme 3: Climatological and Ecological States

Ecological states arose to be as additional significant backer to growing highway calamities. Thick winter smog, seasonal rain, dust storms, rocky land, poor visibility, flash floods, and strong crosswinds considerably upsurge driving deathtraps in Balochistan.

The Quetta Valley and nearby regions comprising Kuchlak, Bostan, Saranan, and Yaro often face dense fog in winter times, decreasing visibility and growing the probability of face-to-face as well as multi-vehicle accidents. Similarly, rain decreases tyre-road resistance as well as backs to automobile slipping, mainly wherever highway surfaces have worsened owing to insufficient care (Pakistan Meteorological Department, 2023; Theofilatos & Yannis, 2014).

Theme 4: Fast Upsurge in Vehicular Traffic and Commercial Transport

Additional important result comprises of the fast development of vehicular traffic on province's road system. In current ages, improved local trades, cross-border trades with Afghanistan and Iran, mining activities, as well as population growth have considerably increased traffic volumes. Though, road structure progress has not had speed with this fast development.

Weighty automobiles, oil transporters, passenger buses, trailers, and commercial cargo automobiles currently constitute a important amount of road traffic. Loaded commercial automobiles often face motorized failures, reduced braking efficacy, tyre bursts, and reduced maneuverability, thus increasing the accident dangers.

Theme 5: Organizational Problems and Emergency Reaction

The examination more specifies that official limits carry on declining highway security supervision in province. Though some institutions comprising the National Highway Authority (NHA), National Highways and Motorway Police (NHMP), provincial transport authorities, and emergency rescue services are accountable for different features of highway security, harmonization among these institutes rests incomplete.

Theme 6: Socioeconomic Effects

The last theme concerns the widespread socioeconomic effects related with growing highway calamities. The studied writings show that highway accidents make both direct and indirect financial damages influencing persons, households, trades, as well as governmental institutes. Direct costs comprise emergency medicinal management, hospitalizations, rehabilitation, automobile maintenances, property loss, lawful measures, and insurance rights. Indirect costs comprise output damages, limited family income, long-standing disability, joblessness, educational disruption, and mental trauma. Households often face austere economic suffering following lethal or disabling accidents since they lose main bread earners though all together experiencing considerable healthcare expenses. Several families use up investments, borrow money, or sell useful possessions to finance medicinal cure. These results agree with earlier studies showing that highway traffic damages back considerably to domestic destitution in low and middle-income states (Bachani, Ghaffar & Hyder., 2011; WHO, 2023).

6. Conclusion and Recommendations

Conclusion

Highway traffic calamities have proved to be a significantly grave public health, transport, and socioeconomic concern in Balochistan. This research paper examines the growing rates of highway calamities on Balochistan's main roads. The results show that the rising occurrence of highway accidents is not attributable to a single feature however rather affects from the collaboration of behavioral, infrastructural, ecological, official, and socioeconomic causes. The examination reveals that human features are the important reasons for highway traffic accidents in Balochistan. The research also reveals that bad highway structure considerably backs to the growing rates of accidents. Ecological and climatic situations likewise arose as important backers to highway security experiences. The socioeconomic effects found in the research paper show that highway traffic calamities spread well beyond mortalities and corporeal casualties. Victims and their relatives often face disastrous medicinal expenses, enduring frailties, joblessness, output damages, mental trauma, family disruption, and decreasing domestic revenue.

Generally, the results assist the Safe System Approach promoted by the World Health Organization, stressing that highway security ought not be depended merely on individual driver responsibility nonetheless should in its place include the formation of a transport structure capable of reducing the magnitudes of unavoidable humanoid fault (World Health Organization. Attaining significant decreases in highway traffic calamities on the roads of Balochistan thus needs combined involvements including harmless structure, sturdier legislature, improved implementation, enhanced driver schooling, climate-resilient manufacturing, bright transport skills, as well as well-organized post-crash emergency care.

Recommendations

Based on the results of this research paper, the following recommendations are proposed to decrease the growing rates of highway calamities on the roads of Balochistan and decrease their socioeconomic magnitudes.

1. The Government must order for fast restoration, broadening, as well as dualizations of high-risk roads, mainly the N-25 and N-50.
2. The Motorway Police must upsurge implementation of traffic rules by presenting automatic speed cameras, electric traffic checking structures.
3. Driver licensing processes must be additionally severe through consistent capability inspections.
4. Modern Intelligent Transportation Systems (ITS) must be applied on main roads to enhance traffic administration. These schemes must comprise variable communication signals, electric speed checking,

modern cautionary schemes for notifying drivers regarding calamities, road closings, as well as hostile climate situations.

5. Government must completely enforce the Safe System Approach advocated by the World Health Organization and the United Nations. This basis distinguishes that though human error cannot be wholly eradicated, transportation schemes ought to be formulated so as to errors may not cause lethal damages. Spending must be made for harmless transportations, harmless automobiles, safer speeds, harmless road users, and real post-crash care should thus prove to be dominant importance in national transportation policy.

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