



## Enhancing Traffic Management in Lahore: A Comprehensive Analysis of Drivers' Perspectives on Interactions with City Traffic Police

Nighat Talha <sup>1</sup>, Shahzaf Iqbal <sup>2</sup>, Syed Abdul Manan<sup>3</sup>

<sup>1</sup> School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia.  
Email: n-talha@hotmail.com

<sup>2</sup> School of Technology Management and Logistics, Universiti Utara Malaysia, Sintok, Kedah, Malaysia.  
Email: shahzafiqbal@yahoo.com

<sup>3</sup> M.Phil. Quality Management, The Superior University, Lahore, Pakistan.  
Email: syedabdulmanan191@gmail.com

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### ABSTRACT

The purpose of this study is to investigate the challenges faced by drivers while interacting with City Traffic Police (CTP) in Lahore, Pakistan. CTP plays a vital role in maintaining traffic flow and improving road safety. The study used a mixed methods approach, combining qualitative interviews using Critical Incident Techniques (CIT) to explore issues, affinity diagrams for thematic analysis, and frequency analysis to quantitatively identify the most important transportation issues based on their occurrence. The study identified 32 different traffic problems and classified them into four categories of drivers. Thematic analysis reveals eight overarching themes, including road conditions, behavioral issues of traffic police, license issuance hurdles, traffic tickets and challans, grievance redressal procedures, signal malfunctions, discriminatory conduct, and corruption within the CTP domain. Quantitative analysis highlights road conditions, behavioral issues, and license-related problems as the most frequently reported concerns. Theoretical implications draw on Social Exchange Theory (SET) to analyze drivers' interactions, emphasizing the pivotal role of trust in shaping satisfaction and compliance. Practical implications urge policymakers to prioritize road maintenance, enhance communication skills of traffic wardens, and address corruption and discrimination for improved traffic management. Limitations include potential bias from convenience sampling, reliance on subjective recollections in CIT, and the study's exclusive focus on drivers. Recommendations for future research advocate rigorous sampling methods, broader geographical scope, diverse stakeholder involvement, and the incorporation of quantitative surveys.

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Corresponding Author's Email: shahzafiqbal@yahoo.com

## 1. Introduction

Traffic congestion poses a major global challenge, affecting the economic, social, and environmental aspects of a country's development and influencing public health (Netithanakul, 2022). Globally, urban areas face the complexities of traffic management, and Lahore, the provincial capital of Punjab, is no exception. Lahore, the second most populous city of Pakistan, witnesses a significant annual increase in the number of vehicles, especially cars. Researchers have argued that increasing traffic volume causes serious congestion and increases air pollution in urban areas, which in turn causes health problems for commuters and urban residents (Haider et al., 2018). Therefore, the role of traffic police, particularly the City Traffic Police (CTP), becomes imperative to address traffic congestion efficiently and effectively by enforcing the law without discrimination and bias to avoid adverse consequences. CTP plays an indispensable role in controlling various aspects of traffic management, thereby shaping the dynamics of urban life

in Lahore. Despite the pivotal role of the CTP in addressing traffic congestion in the metropolitan city of Lahore, incidents often became known in connection with traffic wardens, leading to dissatisfaction among road users, especially drivers. Therefore, there is a need to discuss traffic problems to gain a deeper insight into the daily challenges that drivers face when interacting with CTP traffic wardens during traffic management. Typical functions of CTP include enforcing traffic laws, reducing traffic-related accidents, responding to anti-social activity on the roads and implementing alternative transport strategies in response to events, protests and road blockades. Additionally, CTP participates in public education through events, promotes safe driving, monitors road damage, conducts rapid surveys of roads after disasters, and contributes to the planning of road works (CCP, 2023).

This study investigates the challenges faced by drivers in Lahore when interacting with CTP through interviews with a diverse sample of drivers. Furthermore, based on the identified problems, this study classifies them into conceptually identical themes and subthemes to advance current knowledge and then highlights the most important problems that can affect driver satisfaction based on their occurrence. Given the importance of customers, customer satisfaction is considered an important aspect in the evaluation of government organizations. This view is supported by previous researchers who maintain that police entities are government-run agencies responsible for maintaining order and protecting communities and play a crucial role in influencing citizens' satisfaction with overall police performance (Ali et al., 2016). The importance of customer satisfaction has also been confirmed by several other researchers who emphasized the impact of quality services in improving the image of police agencies and therefore increasing customer satisfaction (Ali et al., 2016; Indahingwati, 2017; Liu, Lan, Chien, Sadiq, & Nawaz, 2022; Mouwen, 2015). Therefore, this study aims to provide evidence-based interventions to improve the traffic management system in Lahore by studying the driver's perspective and bridging the gap between policy formulation and real situations. This study aims to identify and analyze potential issues encountered by drivers in Lahore while interacting with CTP, which may require attention and improvement. The findings are expected to guide future researchers and policymakers by highlighting specific transport issues that can serve as a basis for interventions and policy recommendations to optimize interactions between road users (especially drivers) and CTP.

## **2. Theoretical Background**

This research is based on Social Exchange Theory (SET), which proposes that social interactions are characterized by an ongoing exchange of behaviors and reactions, in which individuals attempt to maximize rewards and minimize costs within the relationship. SET shares some of the basic principles proposed by George C. Homans in 1958, particularly in his book *Social Behavior as Exchange*, emphasizing reciprocity and the exchange of rewards and costs as basic elements that shape social interactions (Homans, 1958). The key principles of SET are as follows: The first principle is reciprocity, where individuals expect that their actions will be reciprocated by others. The second principle emphasizes the evaluation of rewards and costs in social interactions. The third principle states that individuals are motivated by the pursuit of net gain or benefit, which is achieved by maximizing returns and minimizing costs. The fourth principle introduces the concept of comparison levels, which represent an individual's expectations for a relationship. Finally, if the current relationship does not meet expectations, alternative relationships are considered that may lead to dissatisfaction (Homans, 1958). Given the above principles, SET can provide a framework to understand the dynamic exchanges taking place between drivers of motorcycles, autorickshaws, cars, commercial vehicles and CTP in Lahore. The application of SET in the current study will allow researchers to investigate issues arising from interactions with CTP. Furthermore, this study aims to shed light on the complex balance between reciprocity, reward evaluation, cost minimization, and consideration of alternative relationships in the unique context of traffic management in Lahore.

## **3. Literature Review**

Traffic police play a vital role in regulating traffic matters, especially in large urban areas struggling with congestion. Regarding the functions of traffic police, researchers have highlighted some important responsibilities that may include reducing traffic accidents by influencing drivers' behavior, managing road events, conducting accident investigations, and addressing traffic violations (Mali, 2020). Transitioning from the broader perspective, the CTP assumes a pivotal role in ensuring smooth traffic flow in the provincial capital, according to the

Capital City Police Office (CCPO) (Staff Reporter, 2022). Traffic wardens, numbering approximately 3000, have accepted the responsibility for policing a 12-million-person city. They perform a wide variety of public safety, law enforcement, traffic management, and emergency response roles, actively promoting traffic sense and awareness among citizens (CCP, 2023). The present CTP is widely perceived as less controversial than its predecessor traffic police. According to official statistics from CTP Lahore, 6.2 million vehicles and 4.2 million motorcycles are registered in Lahore, making up 32% of the total 19.6 million vehicles in the province of Punjab. CTP oversees the city's traffic with a team of 3000 traffic wardens and 215 Senior Traffic Wardens (CCP, 2023). The primary responsibilities of CTP in Lahore encompass enforcing traffic laws, minimizing road accidents, deterring anti-social behavior on roads, handling traffic during events and protests, advocating for safe driving through public campaigns, overseeing road damage, conducting surveys after disasters, and participating in road engineering planning (CCP, 2023). The CCPO asserts that CTP in Lahore is free from corruption, emphasizing the dedication and professionalism of its educated and talented youth. These officers diligently fulfill their duties despite limited resources, challenging conditions, and severe weather (Staff Reporter, 2022). However, recent reports have implicated Lahore's traffic wardens in fraudulent fine/challan issuances. Subsequently, the Senior Superintendent of Police (SSP) issued a letter to all Chief Traffic Officers (CTOs), requesting certificates confirming the return of mini-Bluetooth printers by traffic wardens. The letter warns of strict action against wardens found using these devices for issuing fines (News Desk, 2023).

### **3.1. Research Problem**

In Lahore, Pakistan, this study explores the challenges drivers face in their daily interactions with the CTP in a dynamic metropolitan setting. Lahore's bustling urban environment features intricate traffic systems and diverse road users, creating complex interactions with law enforcement, particularly the CTP. The research problem stems from the need to comprehensively understand drivers' issues in navigating Lahore's traffic. Given the pivotal role of efficient transportation in metropolitan areas, uncovering challenges in interactions with CTP is crucial for developing strategies to enhance traffic management and overall road user experience. Focusing on daily interactions, the study investigates factors affecting traffic flow, road safety, and transportation efficiency in Lahore. The insights gained aim to inform policymakers, urban planners, and law enforcement, providing valuable perspectives for improving traffic management practices and enhancing urban mobility in Lahore.

### **3.2. Research Question**

What are the various traffic issues experienced by drivers in their interactions with CTP in Lahore?

### **3.3. Research Objectives**

Given consideration to the research question, the present study endeavored to accomplish three specific research objectives, as delineated below:

- To identify and explore specific traffic issues faced by drivers, particularly in their interactions with CTP in Lahore.
- To categorize the identified issues using an affinity diagram approach.
- To determine the significance and frequency of different issue clusters through frequency analysis.

## **4. Methodology**

The current research utilizes a mixed methods framework, incorporating qualitative and quantitative methodologies to thoroughly examine the traffic problems faced by drivers interacting with CTP in Lahore. As outlined by Sekaran and Bougie (2019), "mixed methods research focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies". This study was carried out in two phases. The first phase employed the Critical Incident Technique (CIT) to collect qualitative data through semi-structured interviews, focusing on specific incidents reported by drivers of motorbikes, auto-rickshaws, private cars, and commercial vehicles. Subsequently, the qualitative data (identified issues) were systematically grouped using an affinity diagramming approach, leading to the emergence of subthemes and main themes. The second phase consisted of incorporating a quantitative method, specifically frequency analysis. During the frequency analysis, the

occurrence of incidents or problems was recorded according to themes and then according to the drivers within the data set, thus adding a numerical aspect to the findings and allowing a deeper understanding of the patterns in various categories of drivers. Therefore, the use of a mixed methods research design allowed the researchers to gain a comprehensive understanding of multifaceted traffic problems and increased the credibility and validity of the current study, which is based on the challenges of driver interaction with the CTP.

#### **4.1. Participants**

The participants selected for the present study were drivers of distinct categories including motorcycles, autorickshaws, private cars, and commercial vehicles. These drivers were selected using convenience sampling techniques, recruiting a diverse cohort of 20 drivers in Lahore. Convenience sampling is considered a non-probability sampling technique that selects participants based on convenience or when systematic random or non-random sampling is difficult or impossible. Researchers choose convenience sampling as it focuses on individuals readily available for research purposes (Fraenkel, Wallen, & Hyun, 2018). Several scholars recommend its use in situations where random data collection is impractical, especially with large populations or under constraints of limited resources and time, due to its simplicity and versatility across various study designs (Etikan, Musa, & Alkassim, 2016; Iqbal, Ashfaq, & Moosa, 2022; Sedgwick, 2013). Participants had to meet specific criteria, including being at least 18 years old (the minimum age for obtaining a license in Pakistan), holding a valid license, and residing in Lahore, ensuring an authentic portrayal of their experiences. The diverse cohort included drivers of motorbikes, auto-rickshaws, private cars, and commercial vehicles, with a particular emphasis on issues involving CTP and traffic wardens.

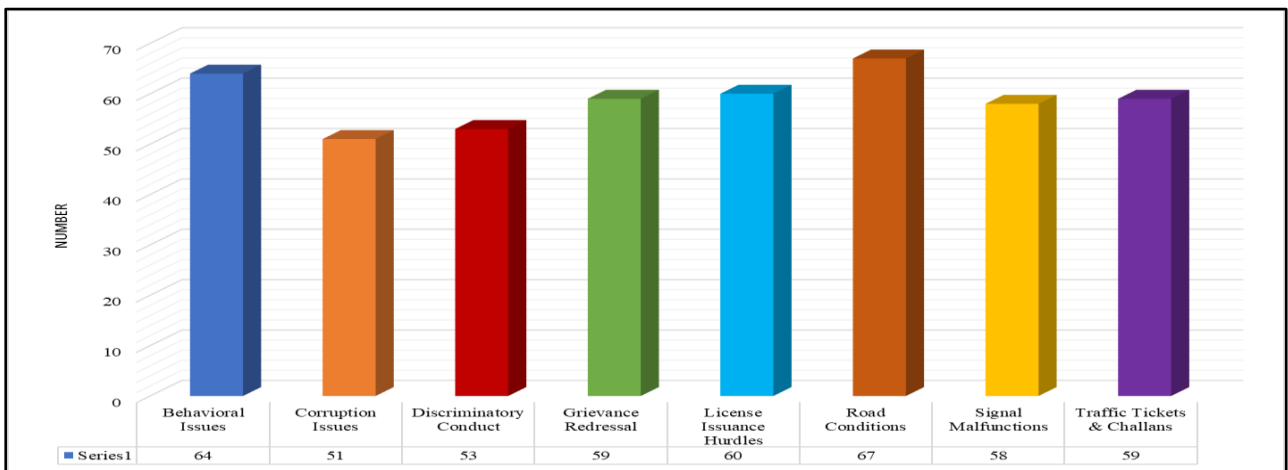
#### **4.2. Data Collection**

The data collection process employed CIT to meticulously gather information on specific instances of traffic issues through semi-structured interviews, featuring a total of nine questions. CIT is based on procedures for collecting, analyzing content, and categorizing observations of human behavior (Flanagan, 1954). This is a type of inductive research approach Edvardsson (1992) and is used specifically in social science topics (Flanagan, 1954). Moreover, CIT is valuable for exploring lesser-known phenomena, as well as essential for comprehensive understanding and description (Bitner, Booms, & Tetreault, 1990). Furthermore, it is considered effective in evaluating customer perceptions in different cultures (Stauss & Mang, 1999). The adoption of CIT in the context of the present study can be beneficial as it provides a valuable approach to understanding fundamental issues in various situations. This is supported by Gremler (2004), who has highlighted the versatility and application of CIT in various service contexts in recent years. The first part of the semi-structured interview included four questions regarding participant demographics (e.g., age, qualifications, vehicle type, and driver's license status). The remaining five questions were aimed at eliciting detailed information on traffic issues based on their experiences with CTP. The first question asked participants to elaborate on a specific traffic-related incident related to their interaction with CTP. The second question inquired about the main challenges drivers face during these interactions. The third question aimed to determine whether a driver's interaction with CTP had a noticeable impact on their overall road experience. The fourth question focused on drivers' perceptions of specific traffic policies or rules enforced by CTP that they found challenging. Finally, the fifth and final question invited participants to share any positive experiences they had during their interaction with CTP. A total of 20 drivers participated in the interviews, including 5 drivers from each category including motorbikes, auto-rickshaws, private cars, and commercial vehicles. Before the interviews began, all participants gave consent, confirmed their willingness to participate, and allowed the interviews to be audio recorded. Furthermore, all participants were male, ranging from illiterate to postgraduate, with valid driving licenses and aged between 18 and 55 years.

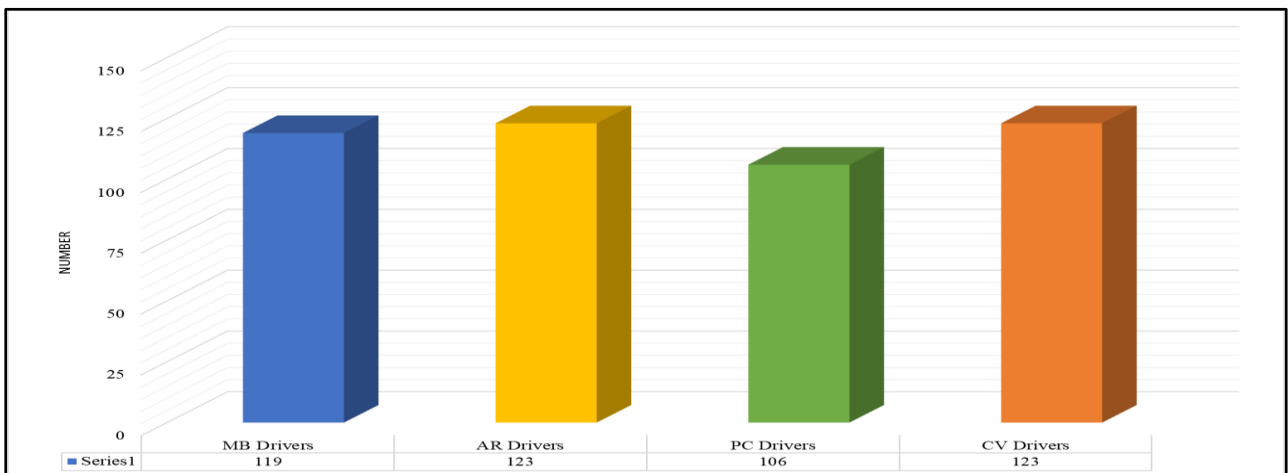
### **5. Data Analysis**

The present study has used two approaches to data analysis. First, a qualitative analysis was conducted using the affinity diagram approach, which is a method for organizing many ideas into several conceptually identical groups or themes. The affinity diagram, also known as the KJ method, was developed in Japan in the 1950s and 1960s by Jiro Kawakita Iba, Yoshikawa, and Munakata (2017), and is a kind of tool for organizing conceptually identical ideas (ASQ, 2022). Furthermore, it is also used to develop vision statements, identify causes of problems, brainstorm solutions, solve quality problems, and develop market research strategies (Islam,

2005). In this study, the researchers used an affinity diagram approach to group questions based on common characteristics discovered when interviewing distinct categories of drivers. The use of affinity diagrams is also supported by previous literature, in which researchers attempt to systematically classify or group various elements into conceptually similar groupings to demonstrate intrinsic relationships (Iqbal, Ashfaq, & Taib, 2022). The affinity diagram process began with individual brainstorming sessions involving the three researchers who were assigned the task of examining the themes that were explored during the CIT interviews. The goal was to organize and classify the identified issues into conceptually similar and systematically manageable clusters or clusters. During the individual brainstorming phase, researchers were not allowed to discuss among themselves, but rather thought independently and generated ideas for group themes. After individual brainstorming, the three researchers met, shared, and discussed their ideas in a collaborative environment. Each researcher was asked to propose a concise name for the group (cluster) that captured the central concept of the group. The researchers then held in-depth discussions about each group's ideas to reach a consensus. The discussion identified eight distinct clusters or themes that revealed the complex dynamics between road users and CTP in Lahore. Therefore, the application of the affinity diagram method allowed researchers to group the numerous problems into eight diverse groups that can serve as a basis for future research. Furthermore, the emergence of eight themes will help understand the challenges faced by drivers and provide a structured framework for CTP and to analyze and address these challenges systematically. Second, the identified issues were analyzed quantitatively using frequency analysis, as shown in Table 1. The objective was to determine the frequency of occurrence of a particular issue or theme in the data collected. Frequency analysis revealed a total of 471 incidents/issues but overlap in issues was observed. In addition, the frequency of each of 32 sub-themes and 8 main themes was quantitatively analyzed from two perspectives: theme-wise, and driver-wise. The frequency analysis by themes is shown in Figure 1.



**Figure 1: Theme Wise Frequency Analysis**



**Figure 2: Driver Wise Frequency Analysis**

Additionally, we conducted a separate frequency analysis, considering both vehicle types and the perspectives of their drivers. There were four distinct categories of drivers, each utilizing a specific type of vehicle. The first category, labeled as "MB Drivers," pertained to motorbike drivers. The second category, denoted as "AR Drivers," encompassed auto-rickshaw drivers. Personal car drivers fell under the third category, referred to as "PC Drivers," while the fourth and final category, named "CV Drivers," pertained to commercial vehicle drivers. The results of this categorization are illustrated in Figure 2. In summary, employing this integrated approach offered a systematic method for identifying and highlighting the most crucial traffic issues gleaned from the collected data.

**Table 1: Frequency Analysis – Traffic Issues Through the Lens of Drivers**

No.	Issues	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total	
1	Discourteous behavior by traffic wardens	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	17
2	Uncooperative interactions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	17
3	Dismissal of drivers' perspectives	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
4	Use of threatening and abusive language	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
5	Broken traffic lights & malfunctioning signals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14
6	Absence of sign boards & improper road markings			✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓		✓		✓		13
7	Unclear emergency numbers & warning signs		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓	✓		16
8	High traffic volumes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓	✓		15
9	Dirty & encroached narrow roads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19
10	Untidy road surroundings, including dumps.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
11	Patchy and uneven road surfaces	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
12	Inadequately filled road patches			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	17
13	Erroneous challans	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	13
14	Unjustified ticket issuances	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
15	Unnecessary and frequent stops	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
16	Prolonged waiting times	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
17	Overlooking traffic violations by friends & relatives	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
18	Disregard for traffic regulations (by traffic wardens)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓		✓	✓			16
19	Unfair targeting of commercial vehicles																✓	✓	✓	✓	✓	✓	05
20	Inconvenient challan system		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
21	Convenient challan submission procedure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	13
22	Effective complaints handling procedure		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
23	Inefficient Challan submission process	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	16
24	Distant submission points	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14
25	Challenges in the license issuance process	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
26	Inconvenient driving testing procedures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
27	Long queues of applicant for driving tests.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12
28	Bribery concerns (license issuance & renewal)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	18
29	Misuse of fines as leverage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	13
30	Solicitation of bribes (to avoid challans)	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14
31	Issuance of fake challans	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
32	Inflated fines		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	13
	<b>Total</b>	19	24	24	27	25	25	26	25	17	30	23	19	22	20	26	25	22	26	27	27	<b>471</b>	

## 6. Results and Discussion

The primary aim of this study was to fulfill four distinct research objectives. The comprehensive outcomes related to each objective, elaborated in conjunction with their respective methodologies, are now outlined:"

### 6.1. Identification of Specific Traffic Issues

The initial objective of this study aimed to identify and examine specific traffic issues encountered by drivers, particularly in their interactions with CTP in Lahore. To achieve this goal, CIT was employed to document traffic incidents involving drivers from four categories, namely motorbikes, auto-rickshaws, personal cars, and commercial vehicles. As mentioned earlier, five drivers were enlisted from each category. In total, 471 incidents were documented, cataloged under 32 distinct categories, as presented in the frequency analysis Table 1. These categories encompass a range of issues, such as discourteous behavior by traffic wardens, uncooperative interactions, dismissal of drivers' perspectives, use of threatening and abusive language, malfunctions in traffic lights and signals, absence of proper signboards and road markings, unclear emergency numbers and warning signs, high traffic volumes, dirty and encroached narrow roads, untidy road surroundings including dumps, patchy and uneven road surfaces, inadequately filled road patches, erroneous challans, unjustified ticket issuances, unnecessary and frequent stops, prolonged waiting times, overlooking traffic violations by friends and relatives, disregard for traffic regulations by traffic wardens, unfair targeting of commercial vehicles, inconveniences in the challan system, convenient challan submission procedures, effective complaints handling procedures, inefficient challan submission processes, distant submission points, challenges in the license issuance process, inconvenient driving testing procedures, long queues of applicants for driving tests, concerns regarding bribery in

license issuance and renewal, misuse of fines as leverage, solicitation of bribes to avoid challans, issuance of fake challans, and inflated fines.

## **6.2. Thematic Analysis using Affinity Diagram Approach**

The study's second objective sought to categorize the identified issues through the application of an affinity diagram approach. This involved conducting a qualitative analysis of the issues and incidents identified using the CIT. The utilization of the affinity diagram approach resulted in the identification of eight distinct thematic groups, offering a comprehensive categorization of the diverse challenges experienced by drivers interacting with CTP in Lahore. Each thematic group is discussed below, highlighting its alignment with the existing body of knowledge.

### **6.2.1. Road Conditions**

Road conditions were the first of eight topics that emerged in this study through the affinity diagram approach. Road condition reflects the quality of the infrastructure, and if roads are damaged, patched, or ditched, it can significantly impact the overall traffic flow in any city, as well as driver satisfaction. For example, a study conducted by Netithanakul (2022) in Bangkok, Thailand, found that traffic police considered road conditions to be the most challenging factor in traffic management. The results highlight the significant impact of road conditions in mitigating traffic challenges, especially when traffic volume is high. Similarly, in another study, researchers identified road conditions as a major factor contributing to road user dissatisfaction (Suanmali, Chankao, Korbsanthia, & Ammarapala, 2015).

### **6.2.2. Behavioral Issues of Traffic Police**

Behavioral issues among traffic wardens were the second theme that emerged from the qualitative analysis and require attention because such behavioral issues can significantly impact driver satisfaction. These issues were also highlighted by Omer (2021) who reported that some wardens allowed violations so that they could issue challans, contrary to their duty to prevent violations. He, therefore, advised the anti-corruption wing to target these regulators who prioritized challan targets instead of ensuring road safety. Considering the importance of traffic warden behavioral issues, CTP needs to educate wardens to be courteous and establish positive interactions with road users, especially drivers, which will create a conducive environment for law enforcement.

### **6.2.3. License Issuance Hurdles**

A third emerging theme, issues related to license issuance or renewal, also requires attention. If the license issuance and renewal process is fair and transparent, it will have a significant impact on driver satisfaction. For example, a study conducted in more than 10 police stations in Iran aimed to identify, assess, and prioritize factors affecting customer satisfaction in Iran's police e-service centers. The results highlight the importance of providing electronic services, including information on driving license requirements, office contact details, service procedures, application status, processing vehicles' fines, and facilitating traffic fine payments (Ali et al., 2016). In other words, an efficient and effective license issuance and renewal system can significantly increase customer satisfaction.

### **6.2.4. Traffic Tickets and Challans**

The issuance of traffic tickets and challans is another pressing issue highlighted through qualitative analysis in this study. According to Omer (2021), CTP has been accused of harassing citizens by issuing challans and impounding vehicles instead of addressing genuine traffic violators. The investigation report revealed that traffic wardens stationed at various locations allegedly neglect their duty to stop actual violators and instead chose to harass law-abiding people. There have also been reports of traffic wardens being involved in issuing false tickets (News Desk, 2023). Previous research has highlighted the importance of transparent systems for issuing tickets and facilitating the payment of traffic fines (Ali et al., 2016). Given the above discussion, a fair and transparent system for issuing traffic tickets (challans) can have a significant impact on driver satisfaction.

### **6.2.5. Grievance Redressal Procedures**

The current study also highlights issues related to existing systems for resolving driver complaints. This requires CTP to establish an effective complaint-handling mechanism so that driver complaints can be resolved efficiently and effectively. In previous literature, researchers

have highlighted the idea of continuous training of police personnel to provide quality services through various communication channels, including Internet, SMS, IVR and telephone calls, and to facilitate effective responses to feedback, complaints or suggestions from people (Ali et al., 2016). Conversely, a lack of responsiveness or transparency in handling complaints can lead to driver dissatisfaction. Therefore, efforts should be made to establish an effective complaint management system that will increase driver satisfaction.

#### **6.2.6. Signal Malfunctions**

The issue of signal malfunctions was also among the eighth issues that emerged during this study, resulting in disruptions to traffic flow and serious confusion for drivers. This is consistent with a previous study on factors affecting road user satisfaction, which revealed that traffic signs (including road signals, warnings, and markings) are one of the six important factors affecting satisfaction (Suanmali et al., 2015). The remaining factors include convenience, facilities, value for money, condition, and safety. Therefore, this study highlights the critical importance of a well-functioning traffic signal system to ensure smooth traffic flow and overall driver satisfaction.

#### **6.2.7. Discriminatory Conduct**

Discriminatory or biased behavior of traffic wardens also emerged as a theme during the present study, which may affect perceptions of fairness in law enforcement. Several researchers have highlighted cases of discrimination reported in newspapers and various sources. These cases highlight concerns related to intra-departmental disparities, such as remuneration, allowances, promotions, and gender, as well as prejudices exhibited by traffic wardens towards drivers, resulting in dissatisfaction between both parties (Abbas, 2014; Azam, 2015; Express, 2010). Therefore, ensuring uniform application of traffic rules to all drivers becomes essential, as fair treatment is essential to improve driver satisfaction and address concerns about intradepartmental disparities and biases exhibited by traffic guards.

#### **6.2.8. Corruption within the CTP Domain**

The eighth and final issue relates to corruption within CTP, which could undermine public trust and satisfaction and cause dissatisfaction among drivers. In Ghana Sam (2022) found through qualitative research that although the primary responsibility of the police is to maintain road security, the main problem is that the police ask for financial bribes, which causes dissatisfaction among drivers. Likewise, recent reports from Lahore, Pakistan, revealed cases of police corruption, including theft of records, abuse of power, and favoritism (Ali, 2023; Correspondent, 2021; Digital, 2023). Corruption issues can negatively impact driver satisfaction and lead to an increase in traffic violations. This is also supported by a study in which researchers found a correlation between police corruption and dissatisfaction with the police, supporting the idea that corruption has a profound impact on public satisfaction and compliance with traffic laws (Nivette & Akoensi, 2019).

### **6.3. Determining Significance of Issues through Frequency Analysis**

The third objective of the study was to assess the significance and frequency of different issue clusters through frequency analysis. This involved a numerical evaluation of drivers' perceptions of traffic issues in Lahore concerning CTP. Initially, a theme-wise frequency analysis (see Figure 1) was conducted, revealing 471 incidents reported by drivers of motorbikes, auto-rickshaws, private cars, and commercial vehicles. Among these incidents, road conditions emerged as the most frequently reported concern (67 incidents), closely followed by behavioral issues with traffic wardens (66 incidents) and problems related to driver's licenses (60 incidents). In contrast, categories with relatively fewer reported incidents included corruption (51 incidents), discriminatory issues (53 incidents), signal-related problems (58 incidents), as well as grievances/complaints handling and challan-related issues (each recorded at 59 incidents). Additionally, a driver-wise frequency analysis was performed to determine the prevalence of reported issues among different driver categories, each associated with a specific type of vehicle. Notable variations were revealed in this analysis, which considered four distinct driver categories: "AR Drivers" (auto-rickshaw drivers), "CV Drivers" (commercial vehicle drivers), "MB Drivers" (motorbike drivers), and "PC Drivers" (private car drivers). The results showed that "AR Drivers" and "CV Drivers" reported the highest number of issues with 123 issues each, followed closely by the "MB Drivers" category with 119 issues reported. In comparison, the "PC Drivers" category recorded the fewest traffic problems with 106 incidents.



In summary, the present study has integrated qualitative (affinity diagram) and quantitative (frequency analysis) approaches to explore, categorize, and prioritize the most prevalent traffic problems based on drivers' perspectives in the context of Lahore. Based on the comprehensive analysis of drivers' problems, it was found that road conditions, behavioral problems of traffic wardens, and licensing-related problems emerged as the most important and prevalent problems that can serve as the basis for integrated traffic management and public satisfaction.

## **7. Conclusion, Implications, Limitations, and Recommendations**

### **7.1. Conclusion**

This study aimed to achieve three objectives, namely, to identify and explore specific traffic problems faced by drivers, especially in interaction with CTP in Lahore; to classify identified problems using the affinity diagram approach; and to determine the importance and frequency of different themes through frequency analysis. The study successfully achieved all its objectives: Firstly, the study identified 471 overlapping challenges/issues using CIT. Secondly, the study categorized the identified problems into 32 sub-themes and 8 themes (including road conditions, behavioral issues of traffic police, obstacles to licensing, traffic fines/challans, grievance redressal procedures, malfunctioning of signals, discriminatory conduct of traffic wardens, and corruption) using the affinity diagram. Finally, a frequency analysis was conducted to strengthen the qualitative findings, highlighting road conditions, behavioral problems, and licensing problems as the most common problems reported by drivers in Lahore. To conclude, the present study integrates both qualitative and quantitative methods and therefore contributes significantly to the current body of knowledge on traffic management and interactions between drivers and CTP. The knowledge gained can inform targeted interventions and policy improvements to address specific challenges and ultimately improve the overall driving experience, satisfaction, and trust in law enforcement in Lahore.

### **7.2. Research Implications**

#### **7.2.1. Theoretical Implications**

This study provides several theoretical contributions, particularly in applying SET to understand how drivers in Lahore interact with CTP. This study explores the perceived costs and benefits of these interactions using SET, viewing them as reciprocal exchanges. By explaining traffic police behavior from this perspective, the study shows that efficient traffic management and fair enforcement are perceived as benefits, which encourages compliance with regulations. Conversely, arbitrary fines or adverse treatment may be viewed as costs, which may lead to dissatisfaction and non-compliance. Additionally, this study recognizes that if drivers perceive their interactions with CTP to be characterized by trust, fairness, and reciprocity, this contributes to greater satisfaction, while perceived imbalances can lead to dissatisfaction and non-compliance. Therefore, policymakers should focus on improving communication skills and fair law enforcement practices among traffic wardens.

#### **7.2.2. Practical Implications**

In terms of practical implications, this study presents some interesting insights for policymakers to emphasize traffic management by prioritizing road maintenance, signage, and markings as critical elements to improve driver satisfaction. In addition, the study also emphasized that the senior CTP official promote awareness among traffic wardens about positive interactions with road users, highlighting the importance of courtesy and professionalism to foster a positive relationship between road users, drivers and the CTP. This study also has implications for traffic officials to streamline and improve the license issuance process, thereby improving complaints from the public, especially drivers.

### **7.3. Research Limitations**

Despite the significant contributions, the present study also has some limitations. First, the study used convenience sampling which may introduce bias, limiting the generalizability of the results to the broader population of drivers. Second, the study relied on the CIT, thereby exposing it to participants' subjective memories, which could affect the accuracy of incident reporting due to personal biases. Lastly, the study only focused on drivers, ignoring the perspectives of key stakeholders such as traffic police, pedestrians and urban planners.

#### 7.4. Recommendations

Given the limitations of the study, future researchers could use random sampling techniques to investigate more diverse populations, including geographic scope, covering multiple cities, and promoting a cross-cultural perspective. Furthermore, future researchers may opt for quantitative studies to empirically validate the issues identified in the present study. Additionally, future studies can involve various stakeholders, such as pedestrians, traffic police, and urban planners, to expand the generalizability of the results.

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