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SNDT Women's University, Mumbai



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Information Needs and Information Seeking
Behaviour of Mumbai Metropolitan City Police

Dr. Sonali Vhatkar & Dr. Vrushali Rane

2026

Information Needs and Information Seeking Behaviour of Mumbai Metropolitan City Police

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About SNTD Women's University

SNTD Women's University is the first women's university in India and South-East Asia, founded in 1916 by Maharshi Dr. Dhondo Keshav Karve with the vision of empowering women through education. The University is headquartered at Churchgate, Mumbai, with additional campuses at Juhu (Mumbai) and Karve Road (Pune). It has a vast academic structure comprising 37 university departments, 13 constituent institutions, and 174 affiliated colleges across Maharashtra, Gujarat, Goa, Madhya Pradesh, and Uttar Pradesh, collectively serving over 70,000 students.

The University has consistently maintained strong academic standards and was awarded NAAC A+ Accreditation in 2025. In alignment with the National Education Policy (NEP) 2020, it established the Centre for Holistic Education, Training and Novel Advancements (CHETNA) in 2022 to promote multidisciplinary and innovative learning. It has also strengthened its academic and research ecosystem through approximately ₹100 crore funding under the PM-USHA Scheme (2024) and is developing the Maharshi Karve Women Empowerment Knowledge Campus at Ballarpur, Chandrapur, with a major government investment to expand skill-based and employment-oriented education for women.

Beyond academics, SNTDWU actively promotes innovation, culture, and student development through initiatives such as Abhivyakti Manch, Yuva Mahotsav, and Innovative Mahakumbh, which supports entrepreneurship and has nurtured incubated, funded, and pre-incubation startups involving students and faculty. The University also preserves Indian Knowledge Systems through BHAGYASY (Bhartiya Gyan, Sanskrit evam Yog Kendra) and the Jagarani Project, which highlights the contributions of Indian women scholars under the theme "Nari Se Narayani." It further strengthens global academic engagement through collaborations such as the International Conference on Climate Change (ICCC-2025) with CUNY, USA. Student welfare remains central through initiatives like Earn and Learn, anti-ragging measures, grievance redressal systems, health camps, and leadership programmes. The 75th Annual Convocation (2025) reflected the University's legacy and its forward-looking vision of innovation, sustainability, and ethical leadership for national development.

Message by Hon'ble Vice-Chancellor

It gives me immense pleasure to present this monograph authored by **Dr. Sonali Vhatkar**, developed from her doctoral research in the field of Library and Information Science at SNDT Women's University.

The monograph, titled "**Information Needs and Information Seeking Behaviour of Mumbai Metropolitan City Police**" is based on the scholar's Ph.D. thesis completed under the able guidance of **Dr. Vrushali Rane**. This work represents a valuable contribution to the field of Library and Information Science, exploring the information requirements, information-seeking patterns, and information-use practices of police personnel within the Mumbai Metropolitan region. By examining how law enforcement professionals access, evaluate, and utilize information in the course of their duties, the study provides important insights into the role of information systems and services in supporting effective decision-making and public service delivery.

The publication of this monograph reflects the University's commitment to making high-quality doctoral research accessible to a wider academic and professional community. Research of this nature contributes to the advancement of knowledge in information behaviour studies and highlights the significance of developing responsive information services and systems tailored to the needs of specialized professional communities.

I congratulate Dr. Sonali Vhatkar on this noteworthy achievement. Her dedication, scholarly rigor, and commitment to research excellence have culminated in a publication that will serve as a valuable resource for researchers, academicians, library and information professionals, police administrators, policymakers, and students. I also extend my sincere appreciation to Dr. Vrushali Rane for her guidance and mentorship throughout the research journey.

I am confident that this monograph will stimulate further scholarly discussion and contribute meaningfully to understanding information behaviour in professional settings, particularly within the context of law enforcement. May it inspire future researchers to undertake innovative studies that enhance information access, management, and utilization across diverse sectors of society.

On this auspicious occasion of the University Foundation Day (5 July 2026), I extend my best wishes to Dr. Sonali Vhatkar and look forward to many more such scholarly contributions that showcase the richness and diversity of research emerging from SNDT Women's University.

Warm regards,

Prof. Dr. Ujwala Chakradeo,
Vice-Chancellor, SNDT Women's University

PREFACE

Information is a very important element of making decisions particularly in professions that require quick responses, accuracy, and situational awareness. Police officers are responsible for maintain law and order and ensuring public safety are dependent on the timeliness and credibility of information. Understanding how police officers identify their information needs and the ways in which they seek and use information is essential for improving access to relevant resources and strengthening institutional support systems.

This book “Information Needs and Information Seeking Behaviour of Mumbai Metropolitan City Police” explores the information needs, nature and types of information required by Mumbai Metropolitan City police, identifies the types of resources used information seeking behaviour, channels through which information accessed, use of information technology, training programmes available and examines the challenges faced by Mumbai police while gathering information.

The completion of this work has been made possible with the guidance of Dr. Vrushali Rane, cooperation and support of many individuals and police officers. I hope that the findings presented in this book will serve as a useful reference for researchers, librarians, policymakers, police officers and professionals interested in understanding the information behaviour of police personnel and improving the information environment within law enforcement agencies.

Dr. Sonali Vhatkar

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CHAPTER 1

INTRODUCTION

Information is available in various format and everywhere, it may be available in the form of documents, evidence, books, periodicals, conference papers, research reports, manuscripts and electronic databases. The library is a storehouse of information that provides various types of information. When there is a need for information, people used to visit the different libraries such as academic, public, private and special libraries to fulfil their information needs. Nowadays in the digital era people are more dependent on digital resources including online libraries. The strategies for retrieving information have changed. In the education field information needs were limited to study and research, whereas in the medical and scientific field information needs were limited to research and experiments. Each discipline has its own needs and behaviour (T. D. Wilson, 1997). Similarly in policing the police officers have information needs and information seeking behaviour. The main function of the police is maintenance of law and order and the prevention and detection of crime. The police also perform several other functions like preventing illegal acts, prosecuting criminals, escorting and guarding prisoners, verifying character, etc. For police officers current and latest information of their field is extremely essential to investigate cases and prevent crimes.

Police officers need to have updated information, for that they have to identify the need for information and how to seek that required information. Information is needed to make the right decision and reduce uncertainty. India is a country with multi-ethnic, poly-normative, multi religion society with many variations where many cases filed in the police station such as general crime, incidence of crime, violent crimes, crimes against women, crime against children, crime against SCs/STs, property crimes, cybercrimes, custodial crimes and disposal of crime case. For these types of cases police officers need detailed information for investigation.

The police officers require a diverse set of resources to effectively carry out their duties. The police officers utilize various types of resources for investigation including human resources, legal resources, technological resources, physical resources, forensic resources, intelligence and information resources, surveillance and monitoring resources. There are various sources through which police officers seek information including Modus Operandi Bureau (MOB), National Crime Records Bureau (NCRB), Bureau of Police Research and Development (BPR&D), Cyber and Information Security (C&IS) Division, Legal Documents, Human Resources, Crime and Criminal Tracking Network and Systems (CCTNS), Call Detail Records (CDR), Mumbai Police Website, E-Challan - Digital Traffic/Transport Enforcement Solution/ Parivahan Sewa, Judgement Website: High Court of Bombay, Court Checker, e-Courts, iRAD, Social Media Applications and Knowledge Materials. The resources help police officers to have communication and engage with the community for investigation and prevention of crime.

The police department has set up few libraries nearby the area of headquarters and some police stations. The libraries have a very good collection of books, journals, and magazines specifically focused on competitive exams, fiction, and police knowledge upgradation. Some libraries have arranged their collection as per the classification systems and some libraries have adopted their own structure of arranging collection. The libraries are mostly used by the police officers who are preparing for competitive exams such as MPSC, UPSC and

other. Also, it is used by the family members of police officers for study purpose. The libraries do not keep any record of police stations, investigation and confidential information. The police officers can always use the libraries to get the books, journals and magazines based on comprehensive legal texts, criminal codes and procedural manuals, law and orders, rules and regulations and fiction.

1.1 Information Needs

Information needs are the information solutions to problems and information sources (T. D. Wilson, 1981). It is associated with searching for information. The information needs can be defined as the gap of information between what is known and what is needed to know. According to Faibisoff & Ely (1974) “the term information needs has become an umbrella under which a variety of interpretations fall because it is a generic term, it often hides more than it reveals”. Belkin & Croft (1992) discussed information needs prompt the person to engage in active information seeking behaviour. Information need is the representation of the query that must be expressed in a language understood by the system. The information need is not easily recognizable like physiological needs. Wilson (1997) discussed the experience of need can be only discovered by inferring need from behaviour or through the reports of the person in need.

1.2 Information Seeking Behaviour

Information Seeking Behaviour is driven to satisfy some goal of information needs. According to Marchionini (1995) information seeking is “a process in which humans purposefully engage in order to change their state of knowledge”. Norbert & Lwoga (2013) stated that “information seeking behaviour is the purposive seeking for information as a consequence of a need to satisfy some goal”. In the course of seeking, the individual may interact with manual information systems (such as newspapers or a library), or with computer-based systems (such as the World Wide Web) (Wilson, 2000).

1.3 Models of Information Seeking Behaviour

There are various information search or seeking behaviour models which focus on the various stages. Each model has used a process in which certain steps or approaches are followed by users to get fulfil the information needs. On the basis of the framework of the 1981 model, the new model of Information Behaviour was developed in 1996. It is a major revision of 1981 model. The model focuses on the user's interactions and needs as opposed to the working of information systems (Eckert, 2020). The model identified variables such as psychological, demographic, interpersonal and environmental. The model also explained the information seeking behaviour including passive attentions, passive search, active search and ongoing search (Garg, 2016).

Ellis's model illustrated six types of information seeking activities including starting, chaining, browsing, differentiating, monitoring and extracting. Ellis's model has been developed after studying the information seeking pattern of social scientists, research physicists, chemists and engineers (Ansari, 2008). The model highlighted the fact that information could be used to satisfy affective needs than cognitive needs. Carol Kuhlthau has developed a model on information behaviour which is considered as an extension of Elli's model for information behaviour. This model considers tasks, thoughts, feelings, actions and strategies. The model is

grounded in both cognitive and affective components (C. C. Kuhlthau, 1991). The model considers the various stages of the information seeking process such as initiation, selection, exploration, formulation, collection and presentation.

Wilson's General Model of Information Behaviour 1996

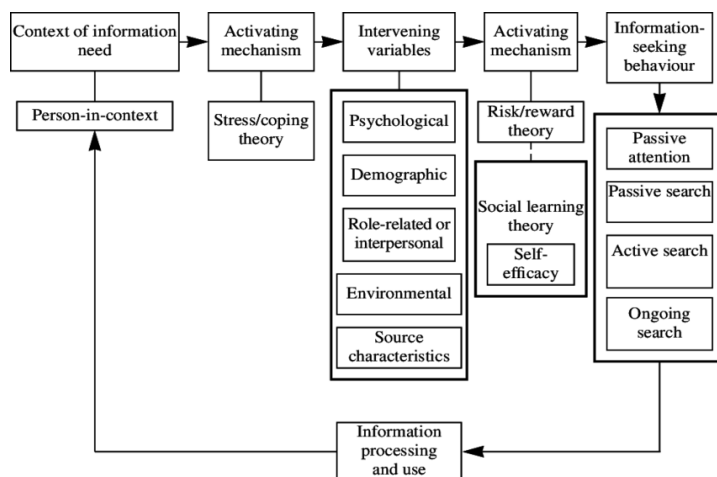


Figure 1.1: Wilson's General Model of Information Behaviour (1996)

Source: Wilson, T. (1999). Models in information behaviour research. *Journal of Documentation*, 55(3), 249–270. <https://doi.org/10.1108/EUM0000000007145>

Ellis's Models of Information Seeking Behaviour 1999

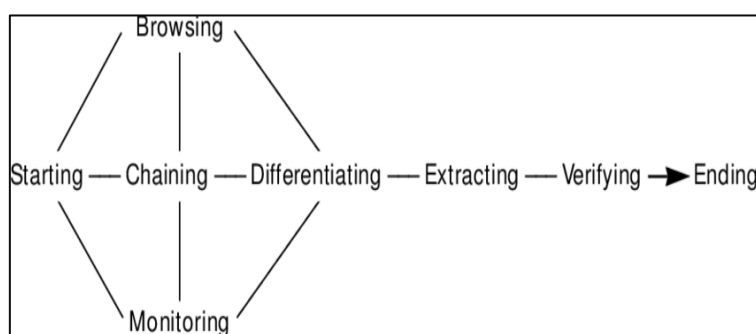


Figure 1.2: Ellis's Models of Information Seeking Behaviour (1999)

Source: Wilson, T. (1999). Models in information behaviour research. *Journal of Documentation*, 55(3), 249–270. <https://doi.org/10.1108/EUM0000000007145>

Kuhlthau's Information Search Process 2004

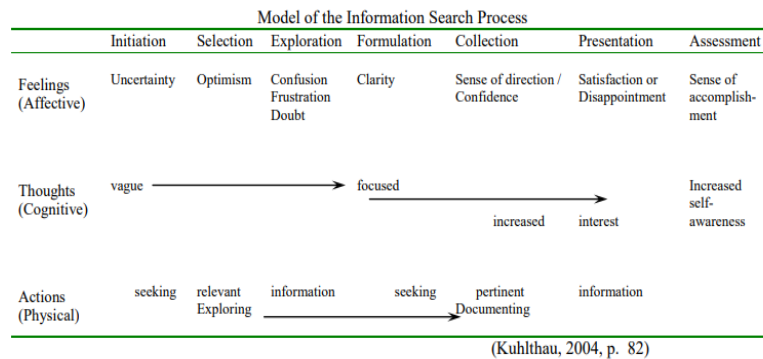


Figure 1.3: Kuhlthau's Information Search Process

Source: Kuhlthau, C. C. (2004). *Seeking meaning: A process approach to library and information services* (2nd ed). Libraries Unlimited.

1.4 Operational Definitions

Information Need- Information need is a desire to find and obtain information and evidences to solve cases, prevent crimes, maintain law and order in the society.

Information Seeking Behaviour- Information seeking behaviour is a process of searching information and evidences to meet the information needs.

Police- Police force is an organised civil force for maintaining law and order, preventing and detecting crime and enforcing the laws.

Police Officer- Police officer is a person who works in Police Force. The employed person is responsible for maintaining public safety, enforcing law and preventing crimes within designated jurisdiction.

Resources

Organizations/Bureau- Organizations/Bureau refers to the organizations and bureau which provides crucial information and guidelines to Police officers.

Legal Materials- The legal materials refer to the documents that cover acts, laws and legal information such as legal documents, government documents and official circular and memos.

Primary Sources- The primary sources include victims, culprits, witnesses, patrol officers, informers and citizens.

Personal Documents- The personal documents provide basic and important guidelines to police officers.

Databases/Record Sets- The databases or record sets have significant information that police officers use for their day-to-day activities like fetching details of the cases, criminals, modus operandi and reports that help for investigation.

Mobile Applications for Police Officers- The mobile applications of police officers provide a variety of information.

Social Media Applications- The social media applications include websites, blogs, WhatsApp, Facebook, Twitter, Instagram and Telegram.

Knowledge Materials- The knowledge materials provide information that help police officers to improve their investigation and knowledge.

1.5 Need and Significance of the Study

The primary purpose of the study is to determine the information needs and identify information seeking behaviour of police officers and awareness of resources. The modern crimes need modern solution to solve it, that make traditional investigation methods insufficient. Police officers need access to wider range of information sources, including human sources, legal documents, digital databases, digital evidences and social media. Without a clear grasp of information seeking behaviour there is a risk of information overload. This may unable to identify the most crucial evidence in investigation. It is necessary for Mumbai police to remain updated accurate information. It is very essential for a police officer to provide right information to public and obtain right information for investigation. Many researches have been conducted to identify different models of information seeking behaviour. Similarly, many researches have been done in different fields such as academic, medical, agricultural, science and many more to understand the information needs. The study will help to know what types of information police officers need for their work. The study will help to know the information needs and information seeking behaviour of Mumbai police and the types of resources used by them. The study will explore how investigation officers approach the challenges and how they can be better supported through improved information management systems.

1.6 Objectives

1. To find out the information needs, nature and types of information required by Mumbai Metropolitan City police
2. To identify the types of resources used by Mumbai Metropolitan City police
3. To find out the information seeking behaviour of Mumbai Metropolitan City police
4. To identify the various channels through which information is accessed by Mumbai Metropolitan City police
5. To explore the use of information technology in gathering information

6. To identify the training programmes available for Mumbai Police
7. To find out the challenges faced by Mumbai police while gathering information

1.7 Hypotheses

Hypothesis 1

- H0= There is no significant difference between the police designation and information needs of Mumbai Police
- H1= There is a significant difference between the police designation and information needs of Mumbai Police

Hypothesis 2

- H0= There is no significant relationship between police units and specific types of resources used by the Mumbai Police.
- H1= There is a significant relationship between police units and specific types of resources used by the Mumbai Police.

Hypothesis 3

- H0= There is no significant relationship between the use of information technology and gathering information by Mumbai Police.
- H1= There is a significant relationship between the use of information technology and gathering information by Mumbai Police.

1.8 Research Methodology

Research Method

The present study has used a mixed method of research with quantitative and qualitative techniques for data collection. The study used Survey method to collect quantitative data from Senior Police Inspector (Sr. PI), Police Inspector (PI), Assistant Police Inspector (API), Police Sub Inspector (PSI) and Assistant Police Sub Inspector (ASI). Understanding the importance of the real scenario of the investigation process, the researcher has used a structured interview method.

Tools of Data Collection

The study has used structured questionnaires and interview techniques to identify and analyse the information needs and information seeking behaviour of police officers. In order to collect in-depth data from the respondents, the two questionnaires were designed.

❖ Questionnaire

Under the quantitative method, the questionnaire was designed with the help of a five-point Likert scale. The questionnaire includes closed-ended and open-ended questions.

❖ Interview

Under the qualitative method, the structured interview questions were framed which mainly focused on real-time experience of information needs and information seeking behaviour of Mumbai police.

Administering Questionnaire

Questionnaires were designed on the basis of research objectives, scope and hypotheses to understand the information needs and information seeking behaviour of Mumbai police. The questionnaires were administered on police officers working in police stations on Mumbai. A total of 366 questionnaires were received from police officers, and 8 interview questionnaires were administered on Sr. PI.

Sampling

The quantitative data has been collected from 366 police officers of 85 police stations of Mumbai Metropolitan City. The data has been collected from below listed police officers.

Table 1.1: Sample

Sr. No.	Category	Sample
1	Senior Police Inspector (Sr. PI)	5
2	Police Inspector (PI)	44
3	Assistant Police Inspector (API)	31
4	Police Sub Inspector (PSI)	132
5	Assistant Police Sub Inspector (ASI)	154
	Total	366

The qualitative data has been collected from 8 Senior Police Inspector (Sr. PI) out of 10. The respondents represented a significant portion of targeted participants. The officers were selected to provide in-depth insights into their experiences and information needs, ensuring that the data captured a comprehensive understanding of the investigation processes within Mumbai police.

1.9 Scope, Limitations and Challenges of the Study

❖ Scope

The study aims to explore how professionally police officers identify, access and utilize information during the investigation process. This includes types of information police officers need, purpose and use of information. The study is designed to explore the ways of seeking information for investigation of cases.

❖ Limitations of the Study

The study is limited to designations of police officers. The study's parameters are purposefully limited to higher authorities of police stations including Senior Police Inspector (Sr. PI), Police Inspector (PI), Assistant Police Inspector (API), Police Sub Inspector (PSI) and Assistant Police Sub Inspector (ASI) of Mumbai Metropolitan City.

❖ Challenges of the Study

The major challenge for researcher was non availability of police officers in police stations due to the work responsibilities such as patrolling, investigation and bandobast, etc. the researcher visited each police station 4-5 times to collect data. Due to lack of time and work pressure police officers could not filled in online questionnaire. Wherever possible, the researcher made every effort to get in touch with police officers and asked them to finish the questionnaire.

1.10 Data Analysis

Data analysis involves systematically examining and interpreting complex datasets to uncover meaningful patterns and insights. The data has been analysed using Statistical Package for Social Science version 24.6. The analysed data has been presented through tables and figures.

CHAPTER 2

REVIEW OF LITERATURE

The study of information needs and information seeking behaviour gained importance in every professional field including academics, healthcare and corporate sectors. However, there have been limited studies have been done on law enforcement specifically in the context of Mumbai Police. Police officers need timely, accurate and relevant information to solve cases and gather evidence. It is essential to understand the specific needs and how police officers seek information. The existing literature on information needs and information seeking behaviour provide framework for exploring the topic, exploring how professionals navigate information system and role of technology in finding information. The review will explore the key studies.

2.1 Use of Technology in Police Force

Nerurkar (2012) discussed that the work culture of police has not drastically changed since British era. There have been hardly few changed done in Indian Penal Code (IPC)s, The Code of Civil Procedure (CPC) and Indian evidence since British era. Patil (2014) revealed that police officers are being involved in every small work including passport verification, traffic, crime investigation and security during festivals, events, etc. Police officers maintain law and order by preventing criminal activities. Lum et al. (2017) argued that technological adoption can be challenging as well as help in improvement of daily routines and developments, job satisfaction and crime control outcomes.

Gupta & Chandra (2006) highlighted the existing system and proposed an interactive query-based interface as crime analysis tool. Their study said that the adoption of e-government applications in police is expected. But police officers need some push to make great use of it. Mishra et al. (2023) revealed that police officers were ready to make a move from legacy procedure of policing. They mentioned that the technology should not be the barrier for police personnel.

Mahajan (2015) discussed that the successful adoption of e-governance has the potential to provide better service passport verification, traffic, crime investigation and security during festivals, events, etc. Borglund (2005) pointed out that electronic records have become a tool for success for police officers. Shastri et al. (2009) noted that technology has changed the scenario of filing complaints. The e-governance in police departments implemented. Andhra Pradesh, Delhi Punjab, Maharashtra and some areas of Uttar Pradesh positively working on it. The Indian government was trying to implement it in each and every police station of the nation. Lambri et al. (2011) pointed out that there were various challenges and complexity involved in implementing and evaluating the benefits of an IT system.

Salim (2014) proposed new method for managing cyber security risks more effectively based on accident or incident analysis. Renu & Pawan (2019) discussed the impact of cybercrimes. They pointed out that the technology makes the life so speedy and fast but it comes up with some hurdles like cybercrime. In this case government was playing an important role and developed software to stop frauds. Malik & Choudhury (2019) discussed the types of cybercrimes, its impacts and legal frameworks. They emphasised on importance of awareness and education in preventing cybercrimes. Badruddin & Ahmad (2019) discussed the cyber security

and challenges such as cybercrimes, hacking, child pornography, cyber stalking, data diddling, web jacking, etc.

Dhir & Sarraf (2016) studied Crime and Criminal Tracking Networks & Systems (CCTNS). Their study concluded that the purpose of CCTNS project was to provide criminal complaints, FIR and other related services to citizens. The CCTNS project produced a higher quality product and resolves the need of the customers. According to the study by Singh & Gulzar (2019) large number of complaints were filed under IPC through CCTNS. It has permitted citizens to register the FIR online. Arshad et al. (2018) highlighted many problems associated with the evaluation for immediate attention and developments related to digital forensic techniques.

2.2 Information Needs and Information Seeking Behaviour of Police Officers

Baker (2004) studies the information needs of female police officers and found that information seeking behaviour model did not entirely explain the information needs of police officers. Adu (2005) investigated the information needs and information seeking behaviour of prosecutors and investigators at the criminal investigation department headquarters. The study found out that the police officers referred different sources to seek information such as catalogues, court proceedings, crime scenes, neighbourhood contacts and legal documents. Tatil (2010) found out that police officers prioritized the relevant sources in urgency. The techno savvy officers used digital databases and others preferred interpersonal communication for information search as information sources. Wherein Demircioglu (2010) found out that crime investigators referred textbooks, personal knowledge, experience, legal documents, personal files and folders for investigation.

Guclu (2011) found out that police officers referred their personal knowledge, experience, legal documents and station commander as information sources. Police officers least consulted library materials such as books and journals. On the other hand Chen & Shaw (2015) revealed that police officers preferred to use internet and personal data which help them for investigation. They required variety of information such as crises, culprits, fraudsters, impersonators, child trafficking, rape and sexual harassment and court proceedings. They sought information through higher authorities, informants, victims and vigilante groups and mass media. The major issue police officers faced was cooperation from the public (Haco-Obasi et al., 2021).

2.3 Information Needs and Seeking Trends among Educators

Khan & Shafique (2011) identified that educators sought information for lecture preparation, upgrading personal knowledge and competencies. They referred books and monographs. They frequently acquired information from institutional libraries. G. Khan & Bhatti (2012) law faculty used variety of legal documents and information sources for academic and research purposes. They mostly used textbooks, general books, dictionaries, law reports, statutes and journals. Law faculty preferred to read information in print form in English language. (Manikandan, 2013) stated that teaching staff and research scholars used formal and informal information sources such as periodicals, conference proceeding, reference books, bibliography and index and abstract. The teaching staff used electronic resources. The major reasons for seeking information were to enhance knowledge of general subject, syllabus-oriented area and prepare for lectures.

Oak & Patil (2014) mentioned that faculty used electronic sources such as internet/intranet sources, Google, Yahoo, IMC Info-Trac database, IEEE/ASPP package and N-LIST. Kalbande & Chavan (2018) identified the problems and satisfaction by the faculty members while using the digital resources. They found out that engineering faculty members mostly access digital resources from their college library, they use e-resources for teaching, to collect subject information, for research and to upgrade knowledge. Kumar (2016) identified the types of resources, services, awareness, purpose and problems faced by faculty members. The faculty members used digital resources to collect subject information, teaching and research work, to update knowledge and for communication. The engineering faculty members access e-Journals, e-Books, OPAC and CD-ROM. They were aware of DELNET, open access journals, NPTEL, IEEE and ASME/ASCE. Jeyaprakash S (2017) concluded that the faculty members used to read textbooks, reference books, newspaper, magazines and open access journals. The barriers and problems for faculty members were insufficient E-resources, lack of training facilities, lack of knowledge about library resources and insufficient library staff.

Gerrish & Martin (2024) examined constituent elements of field station library. The library resources were used for working, teaching and research activities. The library resources were defined by the community's need for GIS assistance, map librarianship, research data management and institutional repository. The library borrows information materials from other branches of librarianship for field station researchers, staff and students to fulfil their information needs.

2.4 Information Needs and Seeking Pattern of Students

Patitungkho (2005) discussed that age was major factor for seeking information. students sought information from teachers, librarians, reference staff for preparing for examination, up-dating knowledge, doing a project. According to Prabhavathi (2011) students visited library every day for preparing for examination, competitive examination, preparing notes, preparing for dissertation and project work. post graduate students often use reference services but never use inter-library loan service, photocopy service, CD-ROM search and book reservation service. Wherein Adio & Arinola (2012) pointed out that of students used internet, reference librarian, textbooks & monographs, journal articles, reference sources, theses and dissertations sources for acquiring information.

Mehra & Bilal (2013) stated the key aspects of the students' information seeking strategies, information needs and use of various ICTs. The students needed guidance and support for academic purposes. Kakai et al. (2004) pointed out that the factors that influence information seeking behaviour and the information sources used by students. recommended some ways to improve students' information seeking behaviour and use of information resources. Oyadeyi (2014) stated that students get influenced by various factors such as course work, assignments, examination and general reading to seek information. K. Singh et al. (2015) pointed out that students needed information for writing articles and doing their research work. They used internet, electronic databases, e-journals, e-theses and dissertations.

Hugar & Kannappanavar (2019) stated that students mostly visited their library to borrow and refer books, journals, to prepare assignments and notes. Wherein the digital resources totally reduced the usage of print materials. The e-resources are very simple to use, accessible at reasonable cost and accessible from anywhere

by anyone (Kavithanjali, 2019). Dadhe & Balkundi, (2021) stated that students used class notes than library resources, MOOCs and subscribed databases. Adamu et al. (2023) pointed out that research scholars required information to write articles about immigration and they used electronic resources such as databases, electronic journals and ebooks. Patel & Patel (2023) stated that candidate preparing for competitive examinations preferred libraries, training classes, magazines, newspapers, reference books, friends, online training classes and social media. The business management students preferred JSTOR, Emerald Management, Science Direct and Oxford University Press database to fulfil their needs (Akhter, 2023).

Mude & Undale (2023) compared the usage of social media between Gen Z and Gen Y. In digital world social media has evolved and popularity has increased significantly. Billions of users use social media such as YouTube, WhatsApp, Meta (Facebook) and other social media platforms. Patel & Patel (2023) conducted a study on information needs and information seeking behaviour of candidates preparing for competitive examinations living in urban and rural areas of Mahisagar district Gujarat. The candidates prefer libraries, training classes, magazines, newspapers, reference books, friends, online training classes and social media for preparing for competitive examinations. The study "Information seeking behaviour of business management university students in India: A comparative study" found out that students frequently seek information through the title of the document. The ICT has a great influence on academic resources. The students of Punjab University, Patiala and Guru Nanak Dev University quite use JSTOR, Emerald Management, Science Direct and Oxford University Press database compared to Panjab University, Chandigarh students (Akhter, 2023).

Parbie et al. (2024) indicated that students need information to articulate a current theory in their own words. They used Google to obtain information. Libraries were the essential source to obtain information. The internet speed was the major challenge faced by the students. But it has also made the information search process easier. Agyapong & Gumbo (2026) investigated information needs and information seeking behaviour of undergraduate education students at UGC Ghana using mixed research method. The study revealed that the students sought academic information through internet sources, electronic media ad discussions with peers, lectures and teaching assistants. It was also revealed that ICT resources were deemed effective and library resources were criticized for staffing and materials inadequacies.

2.5 Information Demands and Search Pattern of Research Scholars

Patade (2016) found out that research scholars spent 2-3 hours in a library for gathering information, referring books and journals. They sought general information to write research articles, papers and books. They took help of librarians in arranging references and other research works. Research scholars were satisfied with the authenticity and scope of digital library resources that's why they frequently use digital library resources for research tasks (A. Khan et al. (2017). Mehla (2018) stated that suitable places for accessing information was e-resources. They used e-resources daily in their department for research purposes.

2.6 Information Requirements and Seeking Preferences of Scientists

Scientists needed research and scientific information. Scientists preferred online databases to seek research information and content for teaching (Srinivasaragavan, 1999). According to Gamage (2006) scientists pointed

out that the library collection on environmental sciences in the in universities were outdated and unorganised. The information they were seeking was not available and updated. They needed relevant and adequate journals. The scientists recommended that libraries to have short-term and long-term solutions to improve the access to the environmental information. K. P. Singh & Satija (2007) stated that agricultural scientists extensively depended on their institutional library or information centre. They sought information from varied sources such as scientific journals, conversation with colleague and experts and books, monographs etc.

2.7 Information Requirements and Retrieval Patterns of Doctors

According to Andrews et al. (2005) practice-based research network (PBRN) practitioners sought information to support patient care. The access to medical libraries was high because they preferred to access print and interpersonal sources for seeking information. Physicians sought information related to diagnosis, treatment and cause of symptom (González-González et al., 2007). Doctors sought clinical information through personal files/collection, colleague's collection, online/internet and hospital library. They used to consult senior doctors and mostly preferred to access print materials (Naeem et al., 2013). Sometime doctors did not have access to health information. There was a limited access to health information on formal information sources such as journals, library services, internet and in-training service. The barriers of accessing health information for health professionals were educational status, less personal initiation, unawareness of information culture, skills and lack of time (Andualem et al., 2013).

2.8 Information Essentials and Search Habits of Farmers

The farmers needed information related to pest and disease management, pesticide and fertilizer application, seed variety, seed treatment, price production practices and credit information. The poor reliability and timeliness were the major challenges faced by farmers while seeking information (Babu et al., 2012). Farmers also needed information on soil and water conservation, seeds and planting materials, Irrigation, storage of crops and modern cultivation system. They sought information from sources such as cooperative bank, other farmers, TV and Leaflet/Brochure/Poster. They were relied on radio, newspaper, extension service, agricultural farm, internet/email and school teachers / lecturer for getting information. Inadequate market information, low level of income, inability to access formal channel of information and inadequate transport facility were the major problems faced by farmers (K. Singh & Varma, 2017). Sruthy Madhavan (2017) stated that farmers needed information about government schemes, loans, subsidies and market information.

2.9 Information Needs and Search Strategies of Politicians and Voters

The parliamentarians used information sources which can be accessed through internet rather than parliament libraries. The parliamentary libraries have potential to offer variety of information sources and services yet it is not well utilized (Mostert & Ocholla, 2005b). The members of assembly and parliament needed information which was helpful in their parliamentary work including meetings, debates, conferences and interviews on political problems. The MPs were depended on books and fellow parliamentarians rather than newspapers, reports and internet (Lithebe, 2006). Jha & Kumar (2022) explained that MPs in India collect fine and performing arts related information. They were connected with the people in terms of fulfilling & promoting ways of life in

the area of arts, culture & education. The voters were interested in interested in documents of political parties and analyses. They sought information from websites, television, Facebook and print newspapers (Majid et al., 2017).

The various studies on professionals indicates that the ample of studies have been done to explore the information needs and information seeking behaviour. The literature review indicates the need for investigating the information needs and information seeking behaviour of Mumbai Metropolitan police officers.

CHAPTER 3

OVERVIEW OF EXISTING RESOURCES FOR POLICE OFFICERS

Information is the output that comes from analysing, contextualizing, structuring, interpreting and processing data. It can be a knowledge obtained from investigation. The information can be any facts, data or opinions in various forms including text, numbers, graphical. Narrative or audiovisual. According to Wilson (1994) information need is essential to the field of information science as it connects to the motivation and deals with the reasons of individuals to seek information.

Resources for Police

The police officers require a diverse set of resources to effectively carry out their duties. The police officers utilize various types of resources for investigation including human resources, legal resources, technological resources, physical resources, forensic resources, intelligence and information resources, surveillance and monitoring resources.

3.1 Organizations/ Bureau

3.1.1 Modus Operandi Bureau (MOB)

Modus Operandi Bureau (MOB) is an initiative by the National Crime Records Bureau (NCRB) under the Union Home Ministry's supervision. The MOB classifies all the records on the basis of modus operandi. It was developed with the purpose to create an Artificial Intelligence (AI) and Natural Language Processing (NLP) based database of modus operandi of various criminals and individuals used to commit crimes. The database was developed to help police to solve cases faster and learn about the methods adopted by criminals. The database is easily accessible to all 16,000 police stations all over the country through Crime and Criminal Tracking Network Systems (N. Chauhan, 2021).

The Modus Operandi (MO) records available in the Crime and Criminal Tracking & Network Systems (CCTNS). The MOB is updated on a regular basis depending on new crimes irrespective of the pattern based on the methods criminals use to commit crimes. As the criminals keep adopting innovations in crime, the list of modus operandi is growing. The police investigation has technological solutions with the help of AI and NLP. With the assistance of AI and NLP police can analyse the text in the First Information Report (FIR) stored in the CCTNS system. Apart from the identification of crimes committed, the MOB also considers the psychology of criminals. The factors including interviews, family profiles, socio-economic conditions and motives behind criminal actions are explored by the researchers. In conclusion, the aim of the Modus Operandi Bureau is to provide valuable insights into criminal behaviour and help solve more cases effectively and efficiently to enhance the law enforcement capabilities.

3.1.2 National Crime Records Bureau (NCRB)

National Crime Records Bureau (NCRB) is an Indian government agency formed to collect and analyse crime data as defined by the Indian Penal Code (IPC) and Special and Local Laws (SLL) under the Ministry of Home Affairs (MHA). The NCRB was established in 1986 with the mission to provide information with the help of technology and criminal intelligence and to provide leadership and excellence in crime analysis to Indian police. The objectives are to store, coordinate and disseminate information on inter-state and international criminals, to analyse crime statistics at the national level, and to supply and receive data to penal and correctional agencies. The other objectives are to provide training facilities to crime records bureaux, to develop modernize crime record bureaux. It also focuses on providing technological solutions, databases and tools to modernized police forces for efficient crime investigation and management.



Figure 3.1: National Crime Records Bureau (NCRB)

Source: Home | National Crime Records Bureau. (n.d.). Retrieved October 14, 2024, from <https://www.ncrb.gov.in/>

The NCRB had launched Motor Vehicle Coordination software (Lost and Found) in 1987, Commencement of Training Police Officers in 1990, Portrait Building System (PBS) in 1991, 7 Integrated Investigation Form (IIF) finalized in 1993. The NCRB has launched Talash software to match of missing and dead persons in 1999, CCTNS project in 2009 and Digital Police Portal in 2017.

The NCRB functions through Crime and Criminal Tracking Network & Systems (CCTNS), Central Finger Print Bureau, Statistical Branch, Training Branch and Data Centre and technical branch.

3.1.3 Bureau of Police Research and Development (BPR&D)

The Bureau of Police Research and Development (BPR&D) is an essential agency under Ministry of Home Affairs in India. It was established in 1970 to modernize the country's police force. The main goal of the agency is to promote research and development in policing practices, remain effective and capable of addressing emerging challenges. The BPR&D conducts research on police issues and provides suggestions to improve the efficiency of the police force. The BPR&D is also responsible for developing training programmes for police personnel at various levels. The BPR&D designs specialized courses in areas such as forensic science,

cybercrime, counterterrorism and community policing. The agency promotes the use of technology in policing. It also plays a significant role in promoting human rights.

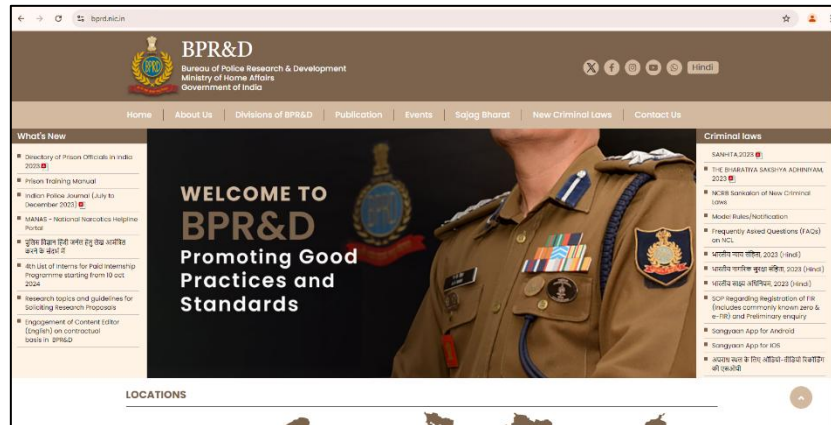


Figure 3.2: Bureau of Police Research and Development (BPR&D)

Source: BPR&D. (n.d.). Retrieved October 14, 2024, from <https://bprd.nic.in/>

3.1.4 Cyber and Information Security (C&IS) Division

The Cyber and Information Security (C&IS) Division deals with cases related to Cyber Crime, Cyber Security, National Information Security Policy & Guidelines (NISPG) and implementation of NISPG, NATGRID, etc. The Cyber world is an incredible part of modern life. The cyber world helps people to connect to each other, communicate, learn, shop and entertain. It has many challenges with cyber threats such as bullying, hacking, identity theft, human trafficking, technology addiction and privacy invasion. The C&IS division plays a crucial role in strengthening the nation's cyber defence.

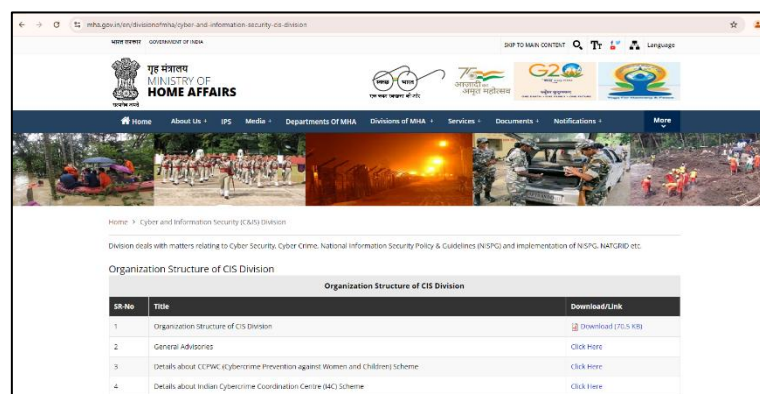


Figure 3.3: Cyber and Information Security (C&IS) Division

Source: Ministry of Home Affairs | Government of India. (n.d.). Retrieved October 16, 2024, from <https://www.mha.gov.in/en/divisionofmha/cyber-and-information-security-cis-division>

3.2 Legal Documents

The legal documents provide legal information to police officers to get updated information, government documents and official circulars and memos. The legal documents include warrants, incident report, case files, custody forms, policies, affidavits, reports, evidences, etc. The legal documents contain the legal information which police officers follow while investigating the cases.

3.3 Human Resources

Human resources play a vital role in investigation. Human resources provide knowledge, expertise and support to solve cases effectively. Human resources include victims, culprits, witness, patrol officers, informers, experts, colleagues, seniors, and citizens etc. The human resources foster a collaborative approach to investigations. The collaboration between units and agencies such as local police, federal and international organisations enable the pooling of resources and information. The victims, culprits, informers and witnesses share important information that may boost the investigation. The informants and witnesses require careful attention to safety and confidentiality. Witnesses and informants can be crucial for the success for the case. Similarly, the community members often provide critical lead that help police officers to identify suspects and locate evidences.

3.4 Databases/Datasets/Websites

3.4.1 Crime and Criminal Tracking Network and Systems (CCTNS)

Crime and Criminal Tracking Network and Systems (CCTNS) was launched in 2009, it is a central database by MHA and NCRB. It was designated as a Mission Mode Project under the National e-Governance Plan (NeGP). The aim of CCTNS is to interlink all police stations under a common software enhancing the efficiency and effectiveness of policing at a police station level (*Ministry of Home Affairs Government of India, 2023*). The purposes behind launching the software are investigation, data analytics, research policy making and providing services to citizens, police and government. The CCTNS interlinked more than 16,347 police stations nationwide (*Crime and Criminal Tracking Network & Systems (CCTNS) - History, Features, Objectives, Working & More, 2023*). It was created to have transparency, interaction and sharing of information among citizens, reducing much paperwork, and citizen friendly police functioning. The CCTNS has digitized the process of filing FIR, Investigation, Charge Sheet, Criminals Records, Crime Records and verification of persons. It facilitates easy ways of recording, retrieval, analysis and dissemination of vast amount of information which will strengthen the outcomes related to crime investigation, criminal detection and other works of police organization.

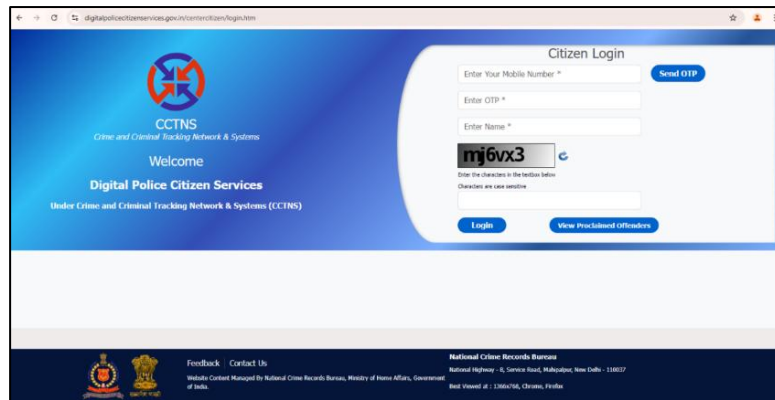


Figure 3.4: Crime and Criminal Tracking Network and Systems (CCTNS)

Source: CCTNS. (n.d.). [Graphic]. Retrieved October 14, 2024, from <https://www.digitalpolicecitizenservices.gov.in/centercitizen/login.htm>

3.4.2 Call Detail Records (CDR)

Mobile phones are widely used in our day-to-day life. It is used by every common man and antisocial elements. Today almost all the criminal cases happen through mobile phones such as fraud, identity theft, cheating, etc. A Call Detail Record (CDR) is a record of calls, text message and internet data connection of a sender and receiver of telephone system including details of the person who made the call and who was called (name and number), the date and time of the call, duration of the call and the geographical location based on the cell tower that handles the communication. The call detail records are becoming more important in daily situations. It is used as a major source of evidence by police in investigation and parties pleading in a court. The call records are not just used for tracking criminals but also it is used for civil conflicts including family disputes, business transactions, contract claims and others. Call Detail Records are considered as valid evidence. It has been used for investigation, tracking absconding or missing persons, finding lost and stolen mobile phones and for other personal use. Through CDR, the police department can get the required information within a minimum of 12 hours, on the basis of urgent request CDR can be send in half an hour by mobile service providers in sensitive cases such as rape, terror or murder when an accused is on the run and has to be arrested. As per the government guidelines, the Telecom companies are required to store the Call Detail Records of up to 6 months or more depending on the Telecom Company (Gour, 2021). The police department can seek the CDR of a person in connection to an investigation only on the request of an officer of the rank of Superintendent of Police, a DCP and rank officer in a commissionerate through writing to the nodal officer of a mobile network service provider (Thaver, 2018).

The analysis of Call Detail Records is important to identify the structure and pattern of criminals and antisocial elements. Such analysis solves many unsolved cases and gives essential information which is required for investigation. CDR analysis is a tedious and tough job. Police use CDR analysis software which uses CDR analysis techniques such as statistical analysis, Machine learning techniques and data visualization to identify the patterns and trends in the data (M. Kumar et al., 2017).

3.4.3 Mumbai Police Website

Mumbai Police is the heart of Mumbai city, without which no one can feel safe and secure. The primary responsibility of Mumbai Police is to law enforcement and ensuring safety for all citizens in the limits of Mumbai. The mission is to create a fear-free environment in the city. The website of Mumbai Police serves as an essential platform for citizens. It acts as a platform of communication and information dissemination for Mumbai police. The website is the representation of services and facilities offered by Mumbai police to citizens. It provides information, services and updates related to Law enforcement in Mumbai city. Mumbai police are spread over the city of Mumbai in 91 Police stations and the map of the police stations are available on Mumbai police website. Citizens can find the important emergency contact numbers, organizational structure, initiatives and history of Mumbai police on the website. The website has application form for loudspeaker permission, No Objection Certificate (NOC), details of passport status, stolen and unclaimed vehicles, safety tips, tenant information, press releases, lost and found people, missing persons and accident compensation (Home | Mumbai Police, 2024).



Figure 3.5: Mumbai Police Website

Source: Home | Mumbai Police. (2024, February 27). <https://mumbaipolice.gov.in/>

3.4.4 E-Challan - Digital Traffic/Transport Enforcement Solution/ Parivahan Sewa

E-Challan software was developed for transport enforcement officers and traffic policemen to provide a comprehensive solution. It is an Android based mobile application and web interface. It has been integrated with Vahan and Sarathi applications which provides ample user-friendly features of all major functionalities of Traffic Enforcement System. The E-Challan application offers customized interfaces for its stakeholders such as Citizens (Private or commercial car owners or drivers), Enforcement Officers, State Transport Office, Regional Transport/ Traffic Office, National Informatics Centre (NIC) admin and Ministry of Road and Transport. The process of taking fines from the people who violate traffic rules has been made more efficient and transparent by the E-Challan system. It is linked to the Regional Transport Office (RTO) database to access vehicle and driver information. It uses CCTV cameras to capture traffic violations and vehicle details.

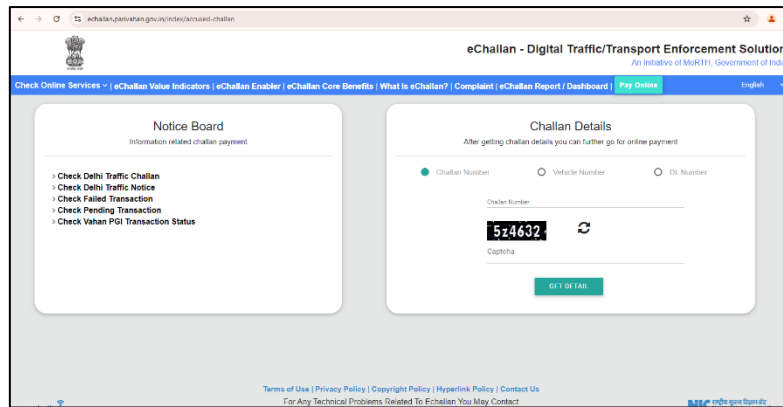


Figure 3.6: E-Challan - Digital Traffic/Transport Enforcement Solution

Source: Ministry of Road Transport and Highways. (n.d.). Retrieved October 15, 2024, from <https://echallan.parivahan.gov.in/index/accused-challan>

3.4.5 Judgement Website: High Court of Bombay

The High Court of Bombay is a Chartered High Court and one of the oldest high courts in the Country. It is the highest judicial authority for the states of Maharashtra and Goa in India and as well as the union territory of Dadra and Nagar Haveli and Daman and Diu. It was established in 1862. The Principal seat of the Bombay High Court is in Mumbai and it has benches at Aurangabad, Nagpur and Panaji (Goa). The High Court of Bombay plays a crucial role in assisting and overseeing the actions of the Mumbai Police. It ensures that police adhere to legal procedures, maintain transparency and act within the law. Police are required to provide precise information and assist public prosecutors when any case comes before the court. The court ensures that they scrutinize police conduct and make sure that justice is served. The high court of Bombay has its website where the information about present judges, case status, unified search facility, court orders, cause list, virtual hearing, display boards, recent judgements, judgement search and other services are available with few clicks. It has become easy and simple for police, lawyers and the public to get the information about the cases.

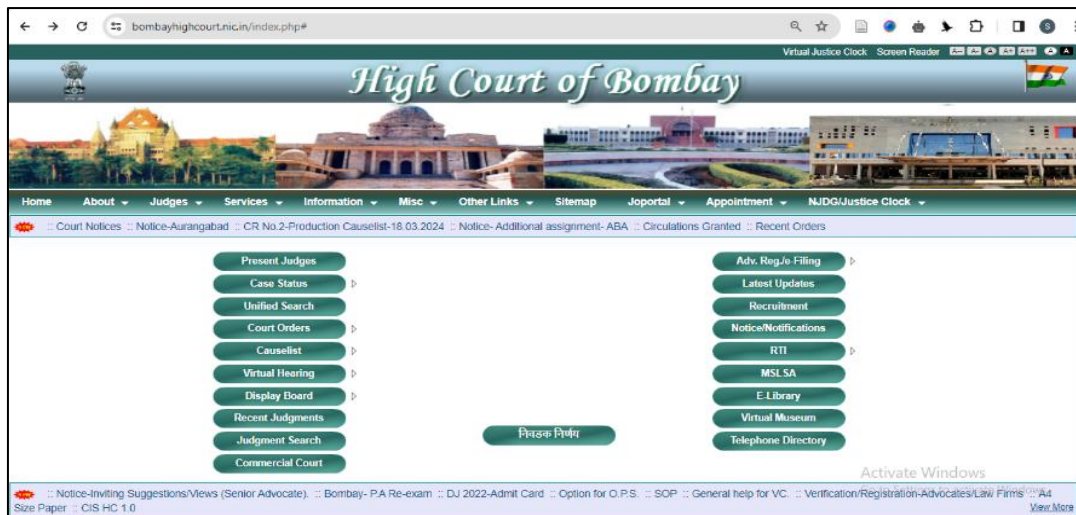


Figure 3.7: Judgement Website: High Court of Bombay

Source: *Official Website of High Court of Bombay.* (n.d.). Retrieved October 16, 2024, from <https://bombayhighcourt.nic.in/index.php>

3.5 Applications

3.5.1 Court Checker

The court checker application of Mumbai police was designed to help users to access and track the status of court cases. The Court Checker application helps police to provide quick, easy and convenient access to a vast database of court cases. The app allows police to search detailed and particular cases that happened in India from thousands of records. It also facilitates communication between various stakeholders in legal process. The application allows to track case progress, manage legal documents and monitor compliances. It helps to get information in within seconds. It allows to search information by entering a name and address which will provide a list of matching cases and images.



Figure 3.8: Court Checker Application

Source: Court Checker Application

3.5.2 e-Courts

The eCourts project was launched by the Government of India under National e-Governance Plan (NeGP). The main aim of launching the project was transforming the Indian judicial system through the use of technology. It was launched to improve the accessibility, efficiency and transparency of the courts by digitizing court operations, allowing litigants, lawyers and the judiciary to manage cases online. The eCourts application helps to make judiciary more efficient, reduce delay and provide access to all citizens. The main features of the eCourts are Case Information System (CIS), e-filing, virtual courts, online payment of court fees, National Judicial Data Grid (NJDG), video conferencing and digital hearings and e-courtroom management.

3.5.3 iRAD

The Integrated Road Accident Database (iRAD) is an initiative of the Ministry of Road Transport and Highway (MoRTH), Government of India. It is funded by world bank with the aim to improve road safety in the country. The main objective of the project is to enrich the accident databases from every parts of the country. The stakeholders of the app are health services, police, transport department, courts, blood banks and insurance companies. The application allows police officers to add details about a road accident along with photos and videos. A unique ID will be generated for the incident and the local body will receive an alert. Hence the personnel can come and examine it and add the further details regarding road design. (*iRAD Mobile and Web Application | Parbhani | India, n.d.*).

3.5.4 Social Media Applications

The social media applications include WhatsApp, Facebook, Instagram, Twitter, Telegram and email provide valuable information to police officers for investigation. With the help of social media applications police officers can get lead for investigation. In the digital era, crucial information for investigation retrieve by police officers. Most of the cases or criminals are being tracked through social media. By effectively using social media, police officers can enhance their investigation work and build stronger relationships with the community.

3.6 Knowledge Materials

The knowledge materials help to build knowledge which can be used in various aspects of investigation. The books, newspapers, magazines and journals provide latest information, legal information and new trends through which investigation can be boosted.

3.7 Summary

The police officers need crucial information for their investigation. The Government of India and Police force have worked on to make the investigation process smooth. The various organisations/bureau, databases/datasets, websites, application and other materials help police officers to retrieve relevant information quickly. The resources help police officers to have communication and engagement with community for investigation and prevention of crime.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATIONS

The chapter aimed to find out the information needs and information seeking behaviour of Mumbai metropolitan city police. The chapter describes the data analysis and interpretations for the collected data. For the analysis and interpretations, the data is presented in tables and graphs. The hypotheses were tested using relevant statistical methods.

4.1 Sample for the study

The quantitative data was collected from 366 police officers including Sr. Police Inspector (Sr. PI), Police Inspector (PI), Assistant Police Inspector (API), Police Sub Inspector (PSI) and Assistant Police Sub Inspector (ASI). The Stratified Random Sampling method was employed to ensure fair representation from different hierarchical levels within the police force. Additionally, qualitative data was gathered from 8 Sr. Police Inspector (Sr. PI) and Police Inspector (PI) using Convenient Sampling method. The mixed method approach enhanced the depth and reliability of the findings of the study.

For quantitative data 530 questionnaires were distributed among police officers of 85 police stations, out of which 366 questionnaires were received after 5-6 visits to each police stations as police officers were occupied with the duties such a bandobast, patrolling, investigation and cases related work. Wherever possible, the researcher made every effort to get in touch with police officers and asked them to finish the questionnaire. The persistent effort highlighted the challenges encountered in collecting data from a workforce engaged in critical public service roles. Whenever possible the researcher arranged personal visits to encourage participation and facilitate the completion of questionnaires. This proactive approach was essential in minimizing response bias and ensuring that a diverse range of perspectives within the police force was representation in the study.

Following table depicts the response rate for the researchers' survey.

Table 4.1 Sampling Response Rate- Quantitative Data

Designation	Total Contacted	No. of Respondents	Percentage
Senior Police Inspector (Sr. PI)	7	5	71.42
Police Inspector (PI)	63	44	69.84
Assistant Police Inspector (API)	46	31	67.39
Police Sub Inspector (PSI)	191	132	59.19
Assistant Police Sub Inspector (ASI)	223	154	69.05
Total	530	366	69.05%

For qualitative data, 8 Sr. PI were interviewed, and the selection of Police Station and Sr. PI was based on the convenient sampling.

4.2 Demographic Information of the Respondents

4.2.1 Designation of Police Officers

The researcher collected data from 366 police officers from Mumbai Metropolitan City. Out of 366 police officers 5 (1.37%) were Senior Police Inspector (Sr. PI), 44 (12.02%) Police Inspector (PI), 31 (8.47%) Assistant Police Inspector (API), 132 (36.07%) Police Sub Inspector (PSI) and 154 (42.08%) Assistant Police Sub Inspector (ASI) from 85 police stations.

Table 4.2: Sampling Response Rate

Designation	No. of Respondents	Percentage
Senior Police Inspector (Sr. PI)	5	1.37%
Police Inspector (PI)	44	12.02%
Assistant Police Inspector (API)	31	8.47%
Police Sub Inspector (PSI)	132	36.07%
Assistant Police Sub Inspector (ASI)	154	42.08%
Total	366	100.00%

4.2.2 Gender Wise Distribution

It was observed that out of 366 police officers 318 (86.9%) police officers were male and 48 (13.1%) police officers were female. This indicated that the police force has more male officers than female officers.

Table 4.3: Gender Profile

Gender	Frequency	Percentage
Male	318	86.9
Female	48	13.1
Total	366	100

4.2.3 Age wise Distribution of Respondents

It was observed that out of 366 police officers, 176 (48.09%) police officers were from 31-40 age range, 91 (24.86%) police officers were from 41-50 age range, 73 (19.95%) police officers were from 51-60 age range and 26 (7.10%) police officers were from 18-30 age range. This indicated that the majority of the police officers were from middle age i.e. 31-40.

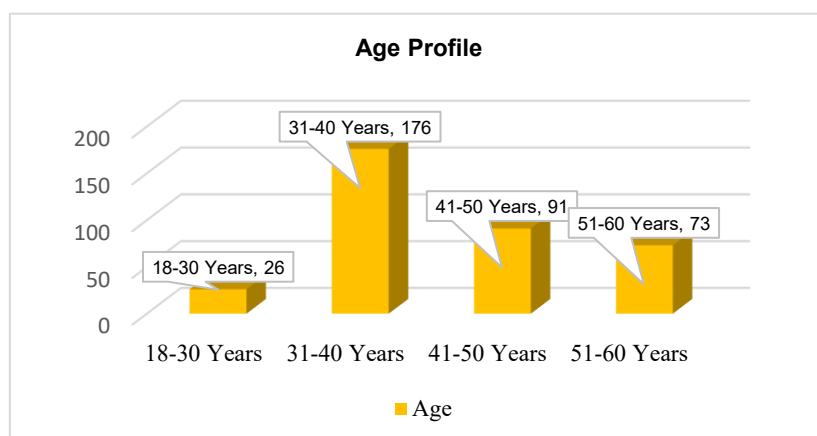


Figure 4.1: Age Profile

4.2.4 Qualification wise Distribution of Respondents

The researcher found out that the 281 (76.8%) police officers had done their graduation, 47 (12.8%) police officers had completed their post-graduation, 29 (2.5%) police officers were HSC passed and 9 (2.5%) police officers were SSC passed. This indicated that the police officers were well qualified.

Table 4.4: Qualification Profile

Qualification	Frequency	Percentage
SSC	9	2.5
HSC	29	7.9
Graduation	281	76.8
Post Graduation	47	12.8
Total	366	100

The majority of the respondents (76.8%) had done graduation followed by the Post Graduation, HSC and SSC. The specialization graph indicates that the majority of the police officers (50%) were from Arts stream followed by Commerce, Science and Engineering. This shows that police officers require creative skills and general knowledge.

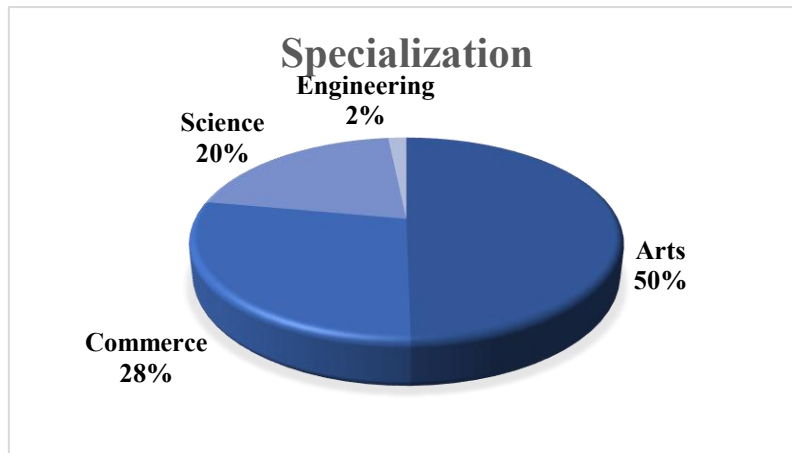


Figure 4.2: Specialization of Respondents

4.2.5 Working Branches of Respondents

The gathered data indicated that the 288 (78.7%) police officers were from police station and rest were from Crime Branch, Cyber Crime, Economic offense wing, Anti-narcotics cell, Anti-human trafficking unit, General, Crime detection unit, Social Cell for Women Branch, Traffic branch, Special branch and Riot control unit. This indicate that the significant portion of police officers play a crucial role in police stations in the operational structure of law enforcement, reflecting the frontline nature of their work.

Table 4.5: Working Branch

Branch	Frequency	Percentage
Police Station	288	78.7
General	5	1.4
Crime Branch	28	7.7
Cyber Crime	10	2.7
Social Cell for Women Branch	3	0.8
Anti-narcotics cell	7	1.9
Anti-human trafficking unit	6	1.6
Economic offense wing	9	2.5
Crime detection unit	5	1.4
Traffic branch	2	0.5
Special branch	2	0.5
Riot control unit	1	0.3
Total	366	100

4.2.6 Distribution of Sample Based on Police Station

The table 4.6 shows that the respondents were from 5 regions of Mumbai Metropolitan City including South Region, Central Region, East Region, West Region and North Region which is divided into 12 zones and 1 Port Zone.

Table 4.6: Distribution of Sample based on Police Station

Region	Zone	Police Station	Frequency	Percentage
South Region	Zone 1	Colaba	7	1.9%
	Zone 1	Cuffe Parade	2	0.5%
	Zone 1	Azad Maidan	6	1.6%
	Zone 1	Dongri	5	1.4%
	Zone 1	Sir J.J. Marg	3	0.8%
	Zone 1	Marine Drive	4	1.1%
	Zone 2	Pydhonie	3	0.8%
	Zone 2	L. T. Marg	5	1.4%
	Zone 2	V. P. Road	5	1.4%
	Zone 2	Dr.D.B Marg	7	1.9%
	Zone 2	Gamdevi	4	1.1%
	Port-Zone	Yellow Gate	4	1.1%
	Port-Zone	Wadala	4	1.1%
	Port-Zone	Sewree	7	1.9%
Central Region	Zone 3	Tardeo	6	1.6%
	Zone 3	Nagpada	4	1.1%
	Zone 3	Agripada	7	1.9%
	Zone 3	Byculla	7	1.9%
	Zone 3	Worli	6	1.6%
	Zone 3	N. M. Joshi Marg	6	1.6%
	Zone 4	Bhoiwada	3	0.8%
	Zone 4	Kalachowki	5	1.4%
	Zone 4	Matunga	4	1.1%
	Zone 4	R.A.K. Marg	2	0.5%
	Zone 4	Sion	5	1.4%
	Zone 4	Antop Hill	4	1.1%
	Zone 4	Wadala Truck Terminal	5	1.4%
	Zone 5	Dadar	7	1.9%
	Zone 5	Shivaji Park	5	1.4%
	Zone 5	Mahim	6	1.6%
	Zone 5	Shahu Nagar	2	0.5%
	Zone 5	Kurla	7	1.9%

Region	Zone	Police Station	Frequency	Percentage
	Zone 5	Vinoba Bhawe Nagar	4	1.1%
	Zone 5	Dharavi	3	0.8%
East Region	Zone 6	Chembur	9	2.5%
	Zone 6	Nehru Nagar	2	0.5%
	Zone 6	Trombay	5	1.4%
	Zone 6	R.C.F.	4	1.1%
	Zone 6	Deonar	4	1.1%
	Zone 6	Shivaji Nagar	3	0.8%
	Zone 6	Tilak Nagar	3	0.8%
	Zone 6	Chunabhatti	5	1.4%
	Zone 6	Mankhurd	4	1.1%
	Zone 6	Govandi	6	1.6%
	Zone 7	Ghatkopar	3	0.8%
	Zone 7	PantNagar	9	2.5%
	Zone 7	Vikhroli	3	0.8%
	Zone 7	Kanjurmarg	2	0.5%
	Zone 7	Navghar	2	0.5%
	Zone 7	Bhandup	2	0.5%
	Zone 7	Mulund	2	0.5%
	Zone 7	Parksite	3	0.8%
West Region	Zone 8	Vakola	6	1.6%
	Zone 8	Kherwadi	5	1.4%
	Zone 8	B.K.C.	4	1.1%
	Zone 8	Nirmal Nagar	3	0.8%
	Zone 8	Sahar	4	1.1%
	Zone 8	Airport	4	1.1%
	Zone 9	Bandra	6	1.6%
	Zone 9	Juhu	6	1.6%
	Zone 9	D. N. Nagar	3	0.8%
	Zone 9	Versova	1	0.3%
	Zone 9	Oshiwara	3	0.8%
	Zone 9	Amboli	2	0.5%
	Zone 10	Sakinaka	4	1.1%
	Zone 10	Powai	3	0.8%
	Zone 10	M.I.D.C.	3	0.8%
	Zone 10	Andheri	4	1.1%
	Zone 10	Jogeshwari	4	1.1%

Region	Zone	Police Station	Frequency	Percentage
North Region	Zone 11	Bangur Nagar Link Road	4	1.1%
	Zone 11	Goregaon	4	1.1%
	Zone 11	Malad	5	1.4%
	Zone 11	Malvani	5	1.4%
	Zone 11	Borivali	5	1.4%
	Zone 11	Kandivali	4	1.1%
	Zone 11	Charkop	2	0.5%
	Zone 11	M.H.B. Colony	5	1.4%
	Zone 11	Gorai	3	0.8%
	Zone 12	Vanrai	3	0.8%
	Zone 12	Dindoshi	7	1.9%
	Zone 12	Kurar	6	1.6%
	Zone 12	Samta Nagar	2	0.5%
	Zone 12	Kasturba marg	4	1.1%
	Zone 12	Dahisar	2	0.5%
	Zone 12	Aarey	5	1.4%
	Total	85	366	100%

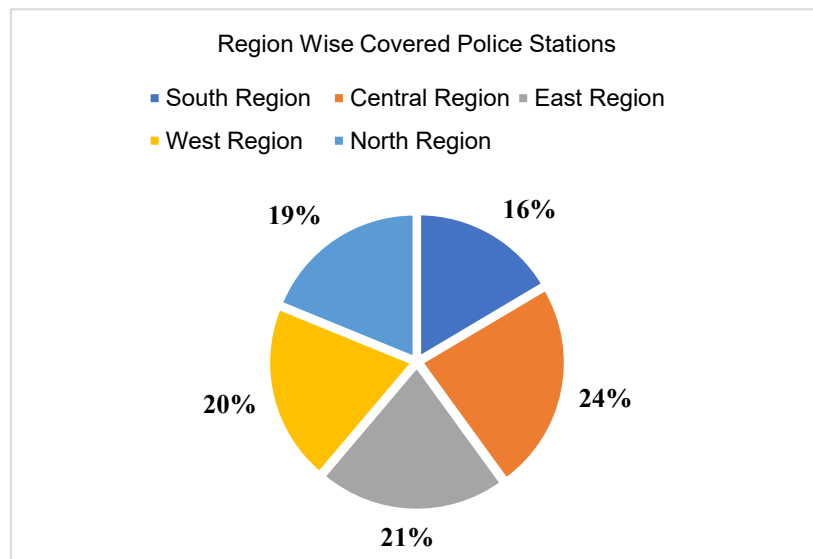


Figure 4.3: Region Wise Covered Police Stations

4.3 Purpose of Information Needs

The purpose of information needs provided the insights into the motivation and actions of individual within a professional setting. A significant majority of police officers (72.4%) reported that they always engage in strengthening work related to decision making. Similarly, 67.2% always contribute to solving cases. Majority of police officers always needed information to catch thief/criminal (73.8%), preventing crimes (76%), solving

queries of people (69.7%), updating personal knowledge (71.3%), continuing further education (59%), sharing knowledge with colleagues (62.6%), getting promotion (58.5%) and for personal needs (61.2%). This indicated that all sorts of information are crucial for police officers which enable them to work proficiently.

Table 4.7: Purpose of Information Need

Statement	Always	Often	Sometimes	Rarely	Never
To strengthen work in decision making	265 (72.4%)	66 (18.0%)	32 (8.7%)	3 (0.8%)	0 (0.0%)
To solve cases	246 (67.2%)	84 (23.0%)	29 (7.9%)	7 (1.9%)	0 (0.0%)
To catch thief/criminal	270 (73.8%)	67 (18.3%)	25 (6.8%)	3 (0.8%)	1 (0.3%)
To prevent crimes	278 (76.0%)	59 (16.1%)	22 (6.0%)	6 (1.6%)	1 (0.3%)
To solve queries of people	255 (69.7%)	69 (18.9%)	25 (6.8%)	17 (4.6%)	0 (0.0%)
To update personal knowledge	261 (71.3%)	69 (18.9%)	31 (8.5%)	3 (0.8%)	2 (0.5%)
To continue further education	216 (59.0%)	62 (16.9%)	50 (13.7%)	21 (5.7%)	17 (4.6%)
To share knowledge with colleagues	229 (62.6%)	104 (28.4%)	23 (6.3%)	7 (1.9%)	3 (0.8%)
To get promotion	214 (58.5%)	81 (22.1%)	42 (11.5%)	16 (4.4%)	13 (3.6%)
To get information for my personal need	224 (61.2%)	77 (21.0%)	37 (10.1%)	10 (2.7%)	18 (4.9%)

4.4 Accessibility of Information

The Mumbai Police officers have various information needs as per their designation. The Senior Police Inspector (Sr. PI) 2 (40%) always get the information as per their requirement for investigation and detection. The Police Inspector (PI) 19 (43.2%) often get information as per their requirements of work. The Assistant Police Inspector (API) 23 (74.2%) and Police Sub Inspector (PSI) 74 (56.1%) always get the information as per their needs of work. Similarly, Assistant Police Sub Inspector (ASI) 92 (59.7%) always get information whenever there is a requirement.

Table 4.8: Crosstabulation of Responses for Designation and Accessibility of Information on Demand by Metropolitan Mumbai Police

Designation	Do you get information whenever required?					
		Always	Often	Sometimes	Rarely	Never
Senior Police Inspector (Sr. PI)	Count	2	1	1	1	0
	% within Designation	40.0%	20.0%	20.0%	20.0%	.0%
	% of Total	.5%	.3%	.3%	.3%	.0%
Police Inspector (PI)	Count	16	19	8	1	0
	% within Designation	36.4%	43.2%	18.2%	2.3%	.0%
	% of Total	4.4%	5.2%	2.2%	.3%	.0%
Assistant Police Inspector (API)	Count	23	4	3	1	0
	% within Designation	74.2%	12.9%	9.7%	3.2%	.0%
	% of Total	6.3%	1.1%	.8%	.3%	.0%
Police Sub Inspector (PSI)	Count	74	41	11	5	1
	% within Designation	56.1%	31.1%	8.3%	3.8%	.8%
	% of Total	20.2%	11.2%	3.0%	1.4%	.3%
Assistant Police Sub Inspector (ASI)	Count	92	42	11	8	1
	% within Designation	59.7%	27.3%	7.1%	5.2%	.6%
	% of Total	25.1%	11.5%	3.0%	2.2%	.3%
Total	Count	207	107	34	16	2
	% within Designation	56.6%	29.2%	9.3%	4.4%	.5%
	% of Total	56.6%	29.2%	9.3%	4.4%	.5%

4.5 Types of Information Required for Professional Work

The study revealed that majority of police officers needed various types of information for investigation and maintaining law and order in the society. The gathered data presented that the majority of police officers needed criminal records, crime records, forensic records, medical records, disputer matter records, financial matter records, industrial matter records, motor vehicle information, legal information, GPS records and

cybercrime records. This indicated that these types of information are extremely useful for police officers for their day-to-day activities such as handling cases, investigating cases, preventing crimes and maintain law and order all over the city.

Table 4.9: Types of Essential Information for Professional Work

Type of Information	Always	Often	Sometimes	Rarely	Never
Criminal records	285	59	16	4	2
	77.9%	16.1%	4.4%	1.1%	0.5%
Crime records	283	58	18	5	2
	77.3%	15.8%	4.9%	1.4%	0.5%
Forensic records	188	77	68	25	8
	51.4%	21.0%	18.6%	6.8%	2.2%
Medical records	195	80	59	26	6
	53.3%	21.9%	16.1%	7.1%	1.6%
Dispute matters	208	74	59	24	1
	56.8%	20.2%	16.1%	6.6%	0.3%
Financial matters	189	75	52	38	12
	51.6%	20.5%	14.2%	10.4%	3.3%
Industrial matters	185	57	53	44	27
	50.5%	15.6%	14.5%	12.0%	7.4%
Motor vehicle information	237	73	38	13	5
	64.8%	19.9%	10.4%	3.6%	1.4%
Legal information	271	72	21	2	0
	74.0%	19.7%	5.7%	0.5%	0.0%
GPS records	218	57	58	28	5
	59.6%	15.6%	15.8%	7.7%	1.4%
Cybercrime records	212	79	40	22	13
	57.9%	21.6%	10.9%	6.0%	3.6%

4.6 Utilization of Library

The police officers indicated the usage of library for their professional work. Considering most of the time the information is being stored in the libraries for users. The police officers were asked to give their response on use of libraries for professional work. The majority of the police officers (59.3%) have mentioned that they never use libraries for the professional information needs. On the other side 17.8% police officers sometimes use library for the professional information needs. This indicated that the majority of the libraries do not have the information which could be useful for police officers. The libraries might be having laws and acts related books which can be referred by police officers to understand the laws for the investigation.

Table 4.10: Library Engagement

	Frequency	Percentage
Always	17	4.6%
Often	24	6.6%
Sometimes	65	17.8%
Rarely	43	11.7%
Never	217	59.3%
Total	366	100.0%

4.7 Types of Libraries Used by Police Officers

Police officers were asked to indicate which other libraries they use for different reasons other than professional work. The police officers (71.9%) never used public libraries run by local bodies/govt for the investigation, 79% of police officers never referred information from university/institute libraries, 78.1% police officers never used private libraries, 83.9% police officers never used special libraries and 85% police officers never used archival libraries for the investigation. On the other hand, 79.2% police officers were using online libraries.

Table 4.11 Types of Libraries Used by Police Officers

	Always	Often	Sometimes	Rarely	Never
Public Libraries run by Local bodies/Govt.	9 (2.5%)	18 (4.9%)	54 (14.8%)	22 (6.0%)	263 (71.9%)
University/Institute Libraries	8 (2.2%)	17 (4.6%)	30 (8.2%)	22 (6.0%)	289 (79.0%)
Private Libraries	7 (1.9%)	9 (2.5%)	36 (9.8%)	28 (7.7%)	286 (78.1%)

Special Libraries	4 (1.1%)	5 (1.4%)	24 (6.6%)	26 (7.1%)	307 (83.9%)
Archival Libraries	3 (0.8%)	4 (1.1%)	18 (4.9%)	30 (8.2%)	311 (85.0%)
Online Library	6 (1.6%)	15 (4.1%)	290 (79.2%)	22 (6.0%)	33 (9.0%)

4.8 Utilization of Resources

Organizations/Bureau

The police officers were strongly agreed that they use Modus Operandi Bureau (64.8%), National Crime Record Bureau (NCRB) (65.8%), Bureau of Police Research and Development (BPRD) (58.5%) and Cyber and Information Security (C&IS) Division (76.5%) to meet their daily information needs.

Table 4.12: Utilization of Organization/Bureau

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Modus Operandi Bureau	Frequency	237	68	50	6	5	366
	Percentage	64.8%	18.6%	13.7%	1.6%	1.4%	100.0%
National Crime Record Bureau (NCRB)	Frequency	241	63	39	17	6	366
	Percentage	65.8%	17.2%	10.7%	4.6%	1.6%	100.0%
Bureau of Police Research and Development (BPRD)	Frequency	214	60	46	29	17	366
	Percentage	58.5%	16.4%	12.6%	7.9%	4.6%	100.0%
Cyber and Information Security (C&IS) Division	Frequency	280	4	57	12	13	366
	Percentage	76.5%	1.1%	15.6%	3.3%	3.6%	100.0%

Legal Materials

The majority of police officers were strongly agreed that they use Legal Documents (78.7%), Official Gazette (64.5%) and Official Circulars and Memos (61.2%) to meet their daily information needs.

Table 4.13: Utilization of Legal Materials

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Legal Documents	Frequency	288	36	39	2	1
	Percentage	78.7%	9.8%	10.7%	0.5%	0.3%
Official Gazette	Frequency	236	62	53	15	0
	Percentage	64.5%	16.9%	14.5%	4.1%	0.0%
Official Circulars and Memos	Frequency	224	78	52	12	0
	Percentage	61.2%	21.3%	14.2%	3.3%	0.0%

Primary Sources

The primary sources such as human sources including victims, culprits, witness, patrol officers, informers and citizens considered to be very important in any investigation. The majority of police officers (76%) strongly agreed that they use human resources to meet their daily information needs.

Table 4.14: Utilization of Primary Sources

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Human sources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)	Frequency	278	59	23	5	1	366
	Percentage	76.0%	16.1%	6.3%	1.4%	0.3%	100.0 %

Personal Documents

In every field in-service training document contain basic and important information which can be used in actual working even after several years of training. The 59% of police officers were strongly agreed that they use in-service training documents to meet their daily information needs.

Table 4.15: Utilization of Personal Documents

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Personal documents- In-service training documents	Frequency	216	65	66	13	6	366
	Percentage	59.0%	17.8%	18.0%	3.6%	1.6%	100.0%

Databases and Record Sets

The technology has evolved drastically in recent years. It has been implemented in police force also. The NCRB has taken an initiative to make the work of police officers easy and quick. The majority of police officers used Crime and Criminal Tracking Network System (CCTNS) (82.8%), Call Detail Record (CDR) (73.5%), Mumbai Police website (66.7%), E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa (63.4%) and Judgments Websites (62%) to meet their daily information needs.

Table 4.16: Utilization of Databases and Record Sets

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Crime and Criminal Tracking Network System (CCTNS)	Frequency	303	43	18	0	2	366
	Percentage	82.8%	11.7%	4.9%	0.0%	0.5%	100.0%
Call Detail Record (CDR)	Frequency	269	48	44	3	2	366
	Percentage	73.5%	13.1%	12.0%	0.8%	0.5%	100.0%

Mumbai Police Website	Frequency	244	66	45	7	4	366
	Percentage	66.7%	18.0%	12.3%	1.9%	1.1%	100.0%
E-challan - Digital Traffic/Transport Enforcement Solution/ Parivahan Sewa	Frequency	232	64	49	7	14	366
	Percentage	63.4%	17.5%	13.4%	1.9%	3.8%	100.0%
Judgments Websites	Frequency	227	70	41	6	22	366
	Percentage	62.0%	19.1%	11.2%	1.6%	6.0%	100.0%

Mobile Applications

The majority of police officers used Court Checker (75.1%), e-Courts (73.2%) and iRAD (51.6%) to meet their daily information needs. These tools proved essential in streamlining their workflows, improving efficiency in case handling, legal documentation, and accessing critical information in a timely manner, ultimately supporting their investigative and law enforcement tasks.

Table 4.17: Utilization of Mobile Applications

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Court Checker	Frequency	275	39	34	7	11	366
	Percentage	75.1%	10.7%	9.3%	1.9%	3.0%	100.0%
e-Courts	Frequency	268	44	40	6	8	366
	Percentage	73.2%	12.0%	10.9%	1.6%	2.2%	100.0%
iRAD	Frequency	189	55	47	28	47	366
	Percentage	51.6%	15.0%	12.8%	7.7%	12.8%	100.0%

Social Media Platforms

The police officers take help of WhatsApp, Facebook, Instagram, Telegram, Twitter, Blog and websites to gather evidence, identify suspects and witness, monitor activity, community engagement, investigating cybercrime and undercover operations. It was observed that majority of police officers strongly agreed that they use Websites, Blogs, WhatsApp, Facebook, Twitter, Instagram, Telegram and Emails to meet their daily information needs.

Table 4.18: Utilization of Social Media Platforms

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Websites	Frequency	231	66	52	9	8	366
	Percentage	63.1%	18.0%	14.2%	2.5%	2.2%	100.0%
Blogs	Frequency	211	64	58	23	10	366
	Percentage	57.7%	17.5%	15.8%	6.3%	2.7%	100.0%
WhatsApp	Frequency	257	52	37	17	3	366
	Percentage	70.2%	14.2%	10.1%	4.6%	0.8%	100.0%
Facebook	Frequency	229	70	44	17	6	366
	Percentage	62.6%	19.1%	12.0%	4.6%	1.6%	100.0%
Twitter	Frequency	187	70	63	29	17	366
	Percentage	51.1%	19.1%	17.2%	7.9%	4.6%	100.0%
Instagram	Frequency	183	59	84	24	16	366
	Percentage	50.0%	16.1%	23.0%	6.6%	4.4%	100.0%

Telegram	Frequency	187	60	76	28	15	366
	Percentage	51.1%	16.4%	20.8%	7.7%	4.1%	100.0%
Emails	Frequency	244	59	40	20	3	366
	Percentage	66.7%	16.1%	10.9%	5.5%	0.8%	100.0%

Knowledge Materials

The knowledge materials consist of books (manuals, laws and regulations, acts, etc.) newspapers, journals and magazines. The majority of police officers indicated that they used Books, Newspapers, Journals and Magazines to meet their information needs.

Table 4.19: Utilization of Knowledge Materials

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Books	Frequency	250	56	35	23	2	366
	Percentage	68.3%	15.3%	9.6%	6.3%	0.5%	100.0%
Newspapers	Frequency	252	52	44	17	1	366
	Percentage	68.9%	14.2%	12.0%	4.6%	0.3%	100.0%
Journals	Frequency	166	51	93	32	24	366
	Percentage	45.4%	13.9%	25.4%	8.7%	6.6%	100.0%
Magazines	Frequency	172	51	84	33	26	366
	Percentage	47.0%	13.9%	23.0%	9.0%	7.1%	100.0%

4.9 Beginning of Information Search

It was essential to understand the seeking behaviours of respondents which considered important by the researcher. Majority (84.4%) of the police officers most of the time approached human resources such as victims, culprits, witness, patrol officers, informers and citizens to start their search for investigation. 73.2% of the police officers also indicated that most of the time they approached their seniors such as ACP, DCP, etc for starting the investigation and 71.9% police officers most of the time discussed the case with their colleagues. 61.2% police officers most of the time accessed available online information databases, 62% police officers indicated that they most of the time used social media to begin their search and 56.6% police officers most of the time searched information in printed resources.

Table 4.20: Beginning with Information Search

		Most of the time	Often	Some of the time	Rarely	Never
Approaching human resources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)	Frequency	309	43	8	6	0
	Percentage	84.4%	11.7%	2.2%	1.6%	0.0%
Approaching seniors (ACP, DCP, etc.)	Frequency	268	64	19	13	2
	Percentage	73.2%	17.5%	5.2%	3.6%	0.5%
Discussion with colleagues	Frequency	263	81	21	1	0
	Percentage	71.9%	22.1%	5.7%	0.3%	0.0%
Accessing available online information databases	Frequency	224	72	46	20	4
	Percentage	61.2%	19.7%	12.6%	5.5%	1.1%
Using social media	Frequency	227	43	46	36	14
	Percentage	62.0%	11.7%	12.6%	9.8%	3.8%
Searching in Printed Resources	Frequency	207	57	37	36	29
	Percentage	56.6%	15.6%	10.1%	9.8%	7.9%

4.10 Duration for Locating Information

It is very much important for police officers to get the information within time to proceed ahead for the investigation. The police officers (61.5% & 66.7% respectively) indicated that criminal records and crime records can be located in less than a day. The study's findings indicated that medical records, dispute matters, financial matters and industrial matters can be located in a week. The motor vehicle information and legal information can be retrieved in less than a day. The overall findings regarding information retrieval indicated that the time required to locate information largely depends on the specific information needs.

Table 4.21: Duration for Locating Information

		Less than 1 day	A day	A Week	Two Weeks	A month	More than a month	Not sure
Criminal Records	Frequency	225	84	30	8	0	0	19
	Percentage	61.5%	23.0%	8.2%	2.2%	0.0%	0.0%	5.2%
Crime Records	Frequency	244	78	26	2	0	0	16
	Percentage	66.7%	21.3%	7.1%	0.5%	0.0%	0.0%	4.4%
Forensic Records	Frequency	10	24	14	29	56	223	10
	Percentage	2.7%	6.6%	3.8%	7.9%	15.3%	60.9%	2.7%
Medical records	Frequency	31	30	176	45	26	18	40
	Percentage	8.5%	8.2%	48.1%	12.3%	7.1%	4.9%	10.9%
Dispute matters	Frequency	20	45	169	58	20	8	46
	Percentage	5.5%	12.3%	46.2%	15.8%	5.5%	2.2%	12.6%
Financial matters	Frequency	20	28	160	68	37	10	43
	Percentage	5.5%	7.7%	43.7%	18.6%	10.1%	2.7%	11.7%
Industrial matters	Frequency	18	20	139	78	38	18	55
	Percentage	4.9%	5.5%	38.0%	21.3%	10.4%	4.9%	15.0%
Motor vehicle information	Frequency	152	100	52	23	12	5	22
	Percentage	41.5%	27.3%	14.2%	6.3%	3.3%	1.4%	6.0%

Legal information	Frequency	146	101	76	13	8	3	19
	Percentage	39.9%	27.6%	20.8%	3.6%	2.2%	0.8%	5.2%
GPS records	Frequency	59	147	111	13	8	3	25
	Percentage	16.1%	40.2%	30.3%	3.6%	2.2%	0.8%	6.8%
Cybercrime records	Frequency	48	86	150	21	10	3	48
	Percentage	13.1%	23.5%	41.0%	5.7%	2.7%	0.8%	13.1%

4.11 Frequency of Utilization of Information Resources

Organizations/Bureau

The study indicated that the police officers always use Modus Operandi Bureau (64.8%), National Crime Record Bureau (NCRB) (69.1%), Bureau of Police Research and Development (BPRD) (61.2%) and Cyber and Information Security (C&IS) Division (69.1%) for investigation.

Table 4.22: Frequency of Utilization of Organization/Bureau

		Always	Often	Sometimes	Rarely	Never
Modus Operandi Bureau	Frequency	237	76	43	6	4
	Percentage	64.8%	20.8%	11.7%	1.6%	1.1%
National Crime Record Bureau (NCRB)	Frequency	253	60	39	10	4
	Percentage	69.1%	16.4%	10.7%	2.7%	1.1%
Bureau of Police Research and Development (BPRD)	Frequency	224	67	40	26	9
	Percentage	61.2%	18.3%	10.9%	7.1%	2.5%
Cyber and Information Security (C&IS) Division	Frequency	253	71	30	3	9
	Percentage	69.1%	19.4%	8.2%	0.8%	2.5%

Legal Materials

The majority of the police officers always used Legal Documents (73.5%), Official Gazette (61.2%) and Official Circulars and Memos (62.3%) for investigation.

Table 4.34: Frequency of Utilization of Legal Materials

Resource		Always	Often	Sometimes	Rarely	Never
Legal Documents	Frequency	269	82	14	1	0
	Percentage	73.5%	22.4%	3.8%	0.3%	0.0%
Official Gazette	Frequency	224	96	42	4	0
	Percentage	61.2%	26.2%	11.5%	1.1%	0.0%
Official Circulars and Memos	Frequency	228	76	56	6	0
	Percentage	62.3%	20.8%	15.3%	1.6%	0.0%

Primary Sources

The majority of police officers (59%) always took help of human resources for investigation. This indicated that human resources played vital role in providing real-time intelligence and verifying details.

Table 4.23: Frequency of Utilization of Primary Sources

Resource		Always	Often	Sometimes	Rarely	Never
Human sources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)	Frequency	216	91	49	10	0
	Percentage	59.0%	24.9%	13.4%	2.7%	0.0%

Personal Documents

The 53.8% of police officers always used in-service training documents in their daily investigation process.

Table 4.24: Frequency of Utilization of Personal Documents

Resource		Always	Often	Sometimes	Rarely	Never
Personal Documents- In-Service Training Documents	Frequency	197	103	54	10	2
	Percentage	53.8%	28.1%	14.8%	2.7%	0.5%

Databases and Record Sets

The significant majority of police officers always used Crime and Criminal Tracking Network System (CCTNS), Call Detail Record (CDR), Mumbai Police website, E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa and Judgments Websites for investigation of cases.

Table 4.25: Frequency of Utilization of Databases and Record Sets

Resource		Always	Often	Sometimes	Rarely	Never
Crime and Criminal Tracking Network System (CCTNS)	Frequency	285	60	20	0	1
	Percentage	77.9%	16.4%	5.5%	0.0%	0.3%
Call Detail Record (CDR)	Frequency	282	63	19	0	2
	Percentage	77.0%	17.2%	5.2%	0.0%	0.5%
Mumbai Police website	Frequency	248	71	35	8	4
	Percentage	67.8%	19.4%	9.6%	2.2%	1.1%
E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa	Frequency	240	70	49	6	1
	Percentage	65.6%	19.1%	13.4%	1.6%	0.3%
Judgments Websites	Frequency	247	62	35	17	5
	Percentage	67.5%	16.9%	9.6%	4.6%	1.4%

Mobile Applications

The majority of police officers used always used Court Checker, e-Courts and iRAD for investigation of cases. Very few police officers indicated that they never used mobile applications for investigation.

Table 4.26: Frequency of Utilization of Mobile Applications

Resource		Always	Often	Sometimes	Rarely	Never
Court Checker	Frequency	265	65	23	5	8
	Percentage	72.4%	17.8%	6.3%	1.4%	2.2%
e-Courts	Frequency	262	67	28	4	5
	Percentage	71.6%	18.3%	7.7%	1.1%	1.4%
iRAD	Frequency	203	37	68	35	23
	Percentage	55.5%	10.1%	18.6%	9.6%	6.3%

Social Media Platforms

The social media stores huge data with it. The police officers indicated that they always take help of social media platforms such as Websites and Emails. Social media may not contain the real and correct information that may help police offices in investigation. The significant portion of police of officers indicated that they sometimes use blog, WhatsApp, Facebook, Twitter, Instagram and Telegram.

Table 4.27: Frequency of Utilization of Social Media Platforms

Resource		Always	Often	Sometimes	Rarely	Never
Websites	Frequency	229	63	33	33	8
	Percentage	62.6%	17.2%	9.0%	9.0%	2.2%
Blogs	Frequency	40	73	201	39	13
	Percentage	10.9%	19.9%	54.9%	10.7%	3.6%
WhatsApp	Frequency	43	61	237	19	6
	Percentage	11.7%	16.7%	64.8%	5.2%	1.6%

Facebook	Frequency	58	60	215	23	10
	Percentage	15.8	16.4	58.7	6.3	2.7
Twitter	Frequency	63	70	197	24	12
	Percentage	17.2%	19.1%	53.8%	6.6%	3.3%
Instagram	Frequency	56	86	185	29	10
	Percentage	15.3%	23.5%	50.5%	7.9%	2.7%
Telegram	Frequency	53	75	187	41	10
	Percentage	14.5%	20.5%	51.1%	11.2%	2.7%
Emails	Frequency	225	72	34	26	9
	Percentage	61.5%	19.7%	9.3%	7.1%	2.5%

Knowledge Materials

The majority of police officers indicated that they always use Books, Newspapers, Journals and Magazines to get some guidance for investigation.

Table 4.28: Frequency of Utilization of Knowledge Materials

Resource		Always	Often	Sometimes	Rarely	Never	Total
Books	Frequency	237	64	27	32	6	366
	Percentage	64.8%	17.5%	7.4%	8.7%	1.6%	100.0%
Newspapers	Frequency	241	56	26	37	6	366
	Percentage	65.8%	15.3%	7.1%	10.1%	1.6%	100.0%
Journals	Frequency	169	72	42	66	17	366
	Percentage	46.2%	19.7%	11.5%	18.0%	4.6%	100.0%
Magazines	Frequency	171	54	53	50	38	366
	Percentage	46.7%	14.8%	14.5%	13.7%	10.4%	100.0%

4.12 Accessing Information

The availability of resources makes the accessibility easier. The findings indicated that majority of the police officers (49.2%) police officers accessed Modus Operandi Bureau from office record room, 52.5% police officers accessed National Crime Record Bureau (NCRB) and 60.4% police officers accessed Bureau of Police Research and Development (BPRD) through websites and 44.8% police officers accessed legal documents from office record room. The majority of police officers accessed official gazette from websites, official circular and memos from office record room.

The police officers accessed personal documents from office record room. The accessibility of Crime and Criminal Tracking Network System (CCTNS) and Call Detail Record (CDR) was restricted, the police officers pointed out that they accessed it from police station only. The E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa, Judgments Websites and knowledge materials were not having any restrictions, hence the police officers highlighted that they accessed it through websites.

Table 4.29: Sources to Access Information through Channels

		Websites	Mobile Applications	Office Record Room	Library	Don't know	Total
Modus Operandi Bureau	Frequency	149	25	180	0	12	366
	Percentage	40.7%	6.8%	49.2%	0.0%	3.3%	100.0%
National Crime Record Bureau (NCRB)	Frequency	192	0	160	0	14	366
	Percentage	52.5%	0.0%	43.7%	0.0%	3.8%	100.0%
Bureau of Police Research and Development (BPRD)	Frequency	221	23	104	0	18	366
	Percentage	60.4%	6.3%	28.4%	0.0%	4.9%	100.0%
Cyber and Information Security (C&IS) Division	Frequency	148	25	177	0	16	366
	Percentage	40.4%	6.8%	48.4%	0.0%	4.4%	100.0%
Legal Documents	Frequency	135	46	164	9	8	366
	Percentage	36.9%	12.6%	44.8%	2.5%	2.2%	100.0%

Official Gazette	Frequency	159	30	149	19	9	366
	Percentage	43.4%	8.2%	40.7%	5.2%	2.5%	100.0%
Official Circulars and Memos	Frequency	147	48	151	11	9	366
	Percentage	40.2%	13.1%	41.3%	3.0%	2.5%	100.0%
Human Resources	Frequency	124	24	209	0	9	366
	Percentage	33.9%	6.6%	57.1%	0.0%	2.5%	100.0%
Personal documents- In-service training documents	Frequency	129	43	158	26	10	366
	Percentage	35.2%	11.7%	43.2%	7.1%	2.7%	100.0%
Crime and Criminal Tracking Network System (CCTNS)	Frequency	0	16	340	0	10	366
	Percentage	0.0%	4.4%	92.9%	0.0%	2.7%	100.0%
Call Detail Record (CDR)	Frequency	158	18	182	0	8	366
	Percentage	43.2%	4.9%	49.7%	0.0%	2.2%	100.0%
E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa	Frequency	195	91	71	0	9	366
	Percentage	53.3%	24.9%	19.4%	0.0%	2.5%	100.0%
Judgments Websites	Frequency	203	76	66	3	12	366
	Percentage	55.5%	20.8%	18.0%	0.8%	3.3%	100.0%
Knowledge Materials	Frequency	155	152	0	59	0	366
	Percentage	42.3%	41.5%	0.0%	16.1%	0.0%	100.0%

4.13 Evaluation of Information Sources and Information Accuracy

Police officers majorly deal with investigation of crimes. The evaluation of information sources and accuracy of information have huge impact on investigation. If the information is wrong and not been evaluated then it will drastically affect the investigation. The significant portion of police officers revealed that they check the reliability, accuracy of the information. They also inspect when the information was produced or gathered, check the relation to the matter of the case and check whether the information is significant or not.

Table 4.30: Evaluation of Information Sources and Accuracy of Information

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
By Checking the Reliability of the Information	Frequency	286	72	5	3	0	366
	Percentage	78.1%	19.7%	1.4%	0.8%	0.0%	100.0%
By Checking the Accuracy of the Information	Frequency	272	81	13	0	0	366
	Percentage	74.3%	22.1%	3.6%	0.0%	0.0%	100.0%
By Inspecting when the Information was Produced or Gathered	Frequency	271	71	21	0	3	366
	Percentage	74.0%	19.4%	5.7%	0.0%	0.8%	100.0%
By Checking the relation to the Matter of the Case	Frequency	274	80	8	0	4	366
	Percentage	74.9%	21.9%	2.2%	0.0%	1.1%	100.0%
By Checking whether the Information is Significant or Not	Frequency	252	78	32	0	4	366
	Percentage	68.9%	21.3%	8.7%	0.0%	1.1%	100.0%

4.14 Adequacy of Resources

The adequacy of resources in police force was investigated to assess the sufficiency of resources.

Organization/Bureau

It was found out that the Modus Operandi Bureau (MOB) (55.2%), National Crime Record Bureau (NCRB) (58.5%), Bureau of Police Research and Development (BPRD) (56%) and Cyber and Information Security (C&IS) Division (63.5%) were completely adequate for investigation. This indicated that the organizations/bureaus were well equipped to support thorough investigations and contribute effectively to law enforcement efforts.

Table 4.34: Adequacy of Organization/Bureau

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Modus Operandi Bureau (MOB)	Frequency	202	99	49	7	9	366
	Percentage	55.2%	27.0%	13.4%	1.9%	2.5%	100.0%
National Crime Record Bureau (NCRB)	Frequency	214	87	38	18	9	366
	Percentage	58.5%	23.8%	10.4%	4.9%	2.5%	100.0%
Bureau of Police Research and Development (BPRD)	Frequency	205	86	46	14	15	366
	Percentage	56.0%	23.5%	12.6%	3.8%	4.1%	100.0%
Cyber and Information Security (C&IS) Division	Frequency	232	80	35	11	8	366
	Percentage	63.4%	21.9%	9.6%	3.0%	2.2%	100.0%

Legal Materials

The legal documents provide support to investigation. The police officers indicated that the legal materials including legal documents (70.5%), official gazette (64.2%) and official circulars and memos (61.5%) were completely adequate. The legal materials highlighted the importance in ensuring the police investigations.

Table 4.35: Adequacy of Legal Materials

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Legal Documents	Frequency	258	75	28	3	2	366
	Percentage	70.5%	20.5%	7.7%	0.8%	0.5%	100.0%
official gazette	Frequency	235	76	38	16	1	366
	Percentage	64.2%	20.8%	10.4%	4.4%	0.3%	100.0%
Official circulars and memos	Frequency	225	81	49	10	1	366
	Percentage	61.5%	22.1%	13.4%	2.7%	0.3%	100.0%

Primary Sources

The primary resources (59%) were completely adequate for police officers. The human sources have the real time information with them which can be used as evidence.

Table 4.36: Adequacy of Primary Sources

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Human sources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)	Frequency	216	91	49	10	0	366
	Percentage	59.0%	24.9%	13.4%	2.7%	0.0%	100.0 %

Personal Documents

While 49.5% police officers indicated that personal documents were completely adequate and 26.8% police officers indicated that personal documents were partially adequate. This indicated that the not all the police officers were dependent on personal documents.

Table 4.37: Adequacy of Personal Documents

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Personal documents- In-service training documents	Frequency	181	98	64	16	7	366
	Percentage	49.5%	26.8%	17.5%	4.4%	1.9%	100.0%

Databases and Record Sets

While significant majority of police officers indicated that Crime and Criminal Tracking Network System (CCTNS), Call Detail Record (CDR), Mumbai Police website, E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa and Judgments Websites provide completely adequate information. These resources were the most prominent resources in police force which provided crucial information about cases, criminals and crimes.

Table 4.38: Adequacy of Databases and Record Sets

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Crime and Criminal Tracking Network System (CCTNS)	Frequency	266	64	32	4	0	366
	Percentage	72.7%	17.5%	8.7%	1.1%	0.0%	100.0%
Call Detail Record (CDR)	Frequency	253	84	23	4	2	366
	Percentage	69.1%	23.0%	6.3%	1.1%	0.5%	100.0%
Mumbai Police website	Frequency	249	66	37	12	2	366
	Percentage	68.0%	18.0%	10.1%	3.3%	0.5%	100.0%
E-challan - Digital	Frequency	252	70	39	4	1	366

Traffic/Transport Enforcement Solution/ Parivahan Sewa	Percentage	68.9%	19.1%	10.7%	1.1%	0.3%	100.0%
Judgments Websites	Frequency	247	59	42	8	10	366
	Percentage	67.5%	16.1%	11.5%	2.2%	2.7%	100.0%

Mobile Applications

The study identified that mobile applications including Court Checker, e-Courts and iRAD were completely adequate. The mobile applications provided court heading details and updates of cases.

Table 4.39: Adequacy of Mobile Applications

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Court Checker	Frequency	246	82	24	9	5	366
	Percentage	67.2%	22.4%	6.6%	2.5%	1.4%	100.0%
e-Courts	Frequency	245	79	29	7	6	366
	Percentage	66.9%	21.6%	7.9%	1.9%	1.6%	100.0%
iRAD	Frequency	201	63	61	24	17	366
	Percentage	54.9%	17.2%	16.7%	6.6%	4.6%	100.0%

Social Media Platforms

The social media platforms may not be that much relevant for all sorts of investigations. The police officers indicated that websites, blogs, WhatsApp, Facebook, Twitter, Instagram, Telegram and Emails were completely adequate. On the other hand, few police officers indicated that blogs, Twitter, Instagram and Telegram were also partially adequate.

Table 4.40: Adequacy of Social Media Platforms

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Websites	Frequency	212	87	49	15	3	366
	Percentage	57.9%	23.8%	13.4%	4.1%	0.8%	100.0%
Blogs	Frequency	171	89	74	25	7	366
	Percentage	46.7%	24.3%	20.2%	6.8%	1.9%	100.0%
WhatsApp	Frequency	213	78	53	20	2	366
	Percentage	58.2%	21.3%	14.5%	5.5%	0.5%	100.0%
Facebook	Frequency	187	80	69	27	3	366
	Percentage	51.1%	21.9%	18.9%	7.4%	0.8%	100.0%
Twitter	Frequency	170	85	74	30	7	366
	Percentage	46.4%	23.2%	20.2%	8.2%	1.9%	100.0%
Instagram	Frequency	170	71	69	50	6	366
	Percentage	46.4%	19.4%	18.9%	13.7%	1.6%	100.0%
Telegram	Frequency	170	71	62	55	8	366
	Percentage	46.4%	19.4%	16.9%	15.0%	2.2%	100.0%
Emails	Frequency	204	80	46	33	3	366
	Percentage	55.7%	21.9%	12.6%	9.0%	0.8%	100.0%

Knowledge Materials

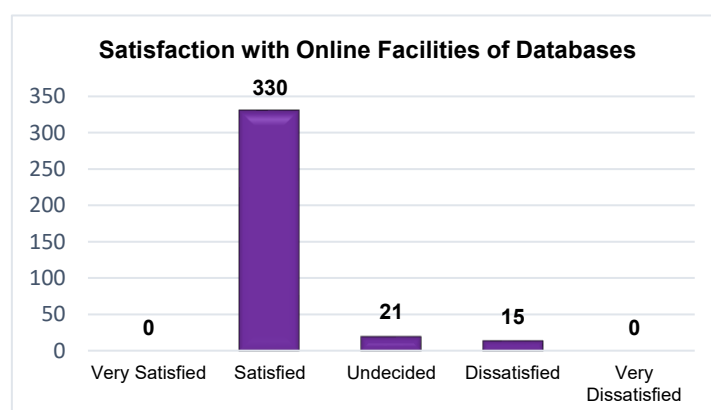
The police officers indicated that knowledge materials such as books, newspapers, journals and magazines were also completely adequate. But few police officers indicated journals and magazines were sometimes partially adequate and fairly adequate resources.

Table 4.41: Adequacy of Knowledge Materials

Resource		Completely Adequate (100%)	Partially Adequate (75%)	Fairly Adequate (50%)	Slightly Inadequate (25%)	Below Inadequate 25%	Total
Books	Frequency	226	66	44	22	8	366
	Percentage	61.7%	18.0%	12.0%	6.0%	2.2%	100.0%
Newspapers	Frequency	216	91	49	10	0	366
	Percentage	59.0%	24.9%	13.4%	2.7%	0.0%	100.0%
Journals	Frequency	169	63	56	44	34	366
	Percentage	46.2%	17.2%	15.3%	12.0%	9.3%	100.0%
Magazines	Frequency	165	62	66	39	34	366
	Percentage	45.1%	16.9%	18.0%	10.7%	9.3%	100.0%

4.15 Satisfaction of Online Facilities

The researcher observed that significant portion of police officers (90.2%) were satisfied with online facilities of databases provided by Mumbai police. This indicated that the information is available in the databases is absolutely useful for the police officers and fulfil the cases and investigation related needs of police officers. Very few police officers (4.1%) indicated that they were dissatisfied with the online facilities of databases provided by police force.

**Figure 4.4: Satisfaction with Online Facilities of Databases**

4.16 Use of Information to Improve Knowledge

Along with the growth of investigation, it is necessary to grow professionally and improve knowledge. It was observed that 86.1% police officers always improve their knowledge through investigation. 75.4% police officers always improve their knowledge for professional growth by reviewing related cases, 74.3% police officers always improve their knowledge through discussion with seniors and colleagues.

The significant portion of police officers (60.9%) always improve their knowledge through social media, 65.8% police officers always improve their knowledge through reading laws, regulation and acts, 61.5% police officers improve their knowledge for professional growth by visiting court sessions and 64.8% police officers improve their knowledge through attending training programmes/workshops.

Table 4.42: Enhancement of Knowledge for Professional Growth

		Always	Often	Sometimes	Rarely	Never
Through investigation	Frequency	315	50	1	0	0
	Percentage	86.1%	13.7%	0.3%	0.0%	0.0%
Reviewing related cases	Frequency	276	77	13	0	0
	Percentage	75.4%	21.0%	3.6%	0.0%	0.0%
Discussion with seniors and Colleagues	Frequency	272	65	28	1	0
	Percentage	74.3%	17.8%	7.7%	0.3%	0.0%
Utilization of social media	Frequency	223	70	62	7	4
	Percentage	60.9%	19.1%	16.9%	1.9%	1.1%
Reading and watching news	Frequency	241	54	46	15	10
	Percentage	65.8%	14.8%	12.6%	4.1%	2.7%
Reading laws, regulations and acts	Frequency	279	59	24	4	0
	Percentage	76.2%	16.1%	6.6%	1.1%	0.0%
Visiting court sessions	Frequency	225	82	34	14	11
	Percentage	61.5%	22.4%	9.3%	3.8%	3.0%
Attending training programmes/workshops	Frequency	237	79	33	12	5
	Percentage	64.8%	21.6%	9.0%	3.3%	1.4%

4.17 Guidance in Information Seeking

The quality work comes up with expertise. The training programmes, conferences and seminars improve the skills and performance of police officers, which enable police officers to be expert in their work. The

study indicated that quite equal number of respondents pointed out that the Mumbai police force frequently, rarely and very rarely conducted training programmes, conferences and seminars on human sources, CCTNS, CDR, C&IS, E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa, judgement websites, court checked, e-courts and iRAD applications for investigation and information retrieval purposes for police officers.

Table 4.43: Guidance in Information Seeking

		Frequently	Rarely	Very Rarely	Never
Human Sources	Frequency	119	96	139	12
	Percentage	32.5%	26.2%	38.0%	3.3%
Criminal Tracking Network System (CCTNS)	Frequency	145	98	113	10
	Percentage	39.6%	26.8%	30.9%	2.7%
Call Detail Record (CDR)	Frequency	129	107	120	10
	Percentage	35.2%	29.2%	32.8%	2.7%
Cyber and Information Security (C&IS) Division	Frequency	128	86	133	19
	Percentage	35.0%	23.5%	36.3%	5.2%
E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa	Frequency	101	118	131	16
	Percentage	27.6%	32.2%	35.8%	4.4%
Judgments Websites	Frequency	85	99	161	21
	Percentage	23.2%	27.0%	44.0%	5.7%
Court Checker	Frequency	113	85	140	28
	Percentage	30.9%	23.2%	38.3%	7.7%
e-Courts	Frequency	116	77	141	32
	Percentage	31.7%	21.0%	38.5%	8.7%
iRAD	Frequency	79	64	186	37
	Percentage	21.6%	17.5%	50.8%	10.1%

4.18 Assessing Satisfaction Level of Programmes Conducted

It was important to understand that whether police officers are really satisfied with the training programmes provided by police force. The significant portion of police officers indicated that they were satisfied with the professional skills, soft skills, computer and software, awareness and knowledge upgradation conducted by police force. The study indicated that police officers gain satisfied knowledge from the training programmes conducted by police force.

Table 4.44: Satisfaction level of Programmes Conducted

		Highly satisfied	Satisfied	Undecided	Dissatisfied	Strongly Dissatisfied
Professional Skills	Frequency	137	181	28	1	19
	Percentage	37.4%	49.5%	7.7%	0.3%	5.2%
Soft Skills	Frequency	132	182	38	0	14
	Percentage	36.1%	49.7%	10.4%	0.0%	3.8%
Computer and Software Training	Frequency	149	175	42	0	0
	Percentage	40.7%	47.8%	11.5%	0.0%	0.0%
Awareness Programme	Frequency	132	174	47	13	0
	Percentage	36.1%	47.5%	12.8%	3.6%	0.0%
Upgrade Knowledge	Frequency	149	164	42	2	9
	Percentage	40.7%	44.8%	11.5%	0.5%	2.5%

4.19 Need of Master Training Programmes

The strong knowledge of the work strategies enables police officers to finish the work smartly within time. They have to have enough knowledge of information seeking strategies whether it is offline or online source. Though police officers were satisfied with the online facilities and programmes conducted they desperately needed training programmes on regular basis.

Table 4.45: Cross Tabulation of Master Training Programmes on Information Seeking Strategies

Designation		Desperately needed	Strongly needed	Somehow needed	Not needed at all
Senior Police Inspector (Sr. PI)	Count	5	0	0	0
	% within Designation	100.0%	.0%	.0%	.0%
	% of Total	1.4%	.0%	.0%	.0%
Police Inspector (PI)	Count	35	8	1	1
	% within Designation	79.5%	18.2%	2.3%	.0%
	% of Total	9.6%	2.2%	.3%	.0%
Assistant Police Inspector (API)	Count	19	9	3	2
	% within Designation	61.3%	29.0%	9.7%	.0%
	% of Total	5.2%	2.5%	.8%	.0%
Police Sub Inspector (PSI)	Count	109	20	3	3
	% within Designation	82.6%	15.2%	2.3%	.0%
	% of Total	29.8%	5.5%	.8%	.0%
Assistant Police Sub Inspector (ASI)	Count	116	37	1	4
	% within Designation	75.3%	24.0%	.6%	.0%
	% of Total	31.7%	10.1%	.3%	.0%
Total	Count	284	74	8	5
	% within Designation	77.6%	20.2%	2.2%	.0%
	% of Total	77.6%	20.2%	2.2%	.0%

4.20 Need of Equipped Information

The researcher focused on need of equipped information among police officers. Total 138 police officers out of 366 responded to the question.

- **Significance of Technological Expertise:**

The police officers stated that there is critical importance of technological knowledge specifically cyber knowledge in modern law enforcement. The number of crimes are getting increasing in the digital age, for which police officers have to have updated knowledge of technology. With the help of technological expert police officers can identify frauds and cybercrimes. The adequate equipped information enables police officers to identify the suspects and gather sufficient evidences. With the help of technological knowledge police officers can help citizens if they find any difficulty or fraud.

- **Speedy Justice and Investigation**

The police officers pointed out that the equipped information help them for effective investigation. It opens up new avenues for investigation and clarifies doubts. The equipped information help police officers to understand the purpose of crime, nature of crime, any linkage and evidences.

- **Efficient Investigation Process**

The police officers stated that they have adopted technology effectively to track criminals, suspect, forensic analysis, analysis of call detail records, databases to check the history of the criminal and modus operandi of the crime and cybercrimes. The effectively adoption of technology in investigation process made police work smooth and efficient.

- **Prevent Crime**

The equipped information can help to prevent crime. The police force is strongly connected to community. The Mumbai police force takes care and control the events and riots happening all over the Mumbai Metropolitan Region. They get information from detectives, informers and citizens. The well-equipped information help Mumbai police to prevent crimes.

4.21 Challenges in Seeking Information

The study investigated the challenges faced by police officers while seeking information. In this context significant portion of police officers mentioned that they rarely experience of lack of information in their known language. They also reported issues such as lack of digital information, irrelevant information, non-accessibility to confidential information and restricted access to basic information. Additionally, police officers faced challenges like insufficient information, lack of knowledge of online search strategies, heavy work pressure, scattered information, unorganized information, missing information, lack of support from higher authority, lack of support from technical staff, lack of awareness to locate appropriate information and inadequate communication facilities, no internet facility in office, non-availability library facility.

However, a significant portion of police officers still often or always faces these barriers, indicating improvement in the availability and accessibility of information. They reported improvement in support and arrangement of facilities for seeking information.

Table 4.46: Challenges Faced while Seeking Information

		Always (100%)	Often (75%)	Sometimes (50%)	Rarely (25%)	Never (Below 25%)
Non-availability of Information in Known Languages	Frequency	42	70	88	124	42
	Percentage	11.5%	19.1%	24.0%	33.9%	11.5%
Non-availability of Required Information in Digital Format	Frequency	29	70	100	136	31
	Percentage	7.9%	19.1%	27.3%	37.2%	8.5%
Irrelevant Information	Frequency	26	53	109	141	37
	Percentage	7.1%	14.5%	29.8%	38.5%	10.1%
Non-availability of Confidential Information	Frequency	42	56	63	165	40
	Percentage	11.5%	15.3%	17.2%	45.1%	10.9%
Restricted Access to Available Information	Frequency	25	62	97	139	43
	Percentage	6.8%	16.9%	26.5%	38.0%	11.7%

Insufficient Resources	Frequency	41	75	87	139	24
	Percentage	11.2%	20.5%	23.8%	38.0%	6.6%
Lack of Knowledge of Online Search Strategies	Frequency	19	63	104	142	38
	Percentage	5.2%	17.2%	28.4%	38.8%	10.4%
Insufficient time to Search for Information Because of Too Much Work Pressure	Frequency	85	63	84	110	24
	Percentage	23.2%	17.2%	23.0%	30.1%	6.6%
Information is Scattered, and Difficult to Locate	Frequency	55	57	108	124	22
	Percentage	15.0%	15.6%	29.5%	33.9%	6.0%
Unorganized Information	Frequency	39	67	102	135	23
	Percentage	10.7%	18.3%	27.9%	36.9%	6.3%
Missing Information	Frequency	20	61	121	138	26
	Percentage	5.5%	16.7%	33.1%	37.7%	7.1%
Lack of Support from Higher authority to seek information	Frequency	27	32	100	148	59
	Percentage	7.4%	8.7%	27.3%	40.4%	16.1%

Lack of Technical Knowledge	Frequency	23	55	75	162	51
	Percentage	6.3%	15.0%	20.5%	44.3%	13.9%
Lack of Support from Technical Staff	Frequency	32	46	78	165	45
	Percentage	8.7%	12.6%	21.3%	45.1%	12.3%
Lack of Awareness to Locate Appropriate and Required Information	Frequency	28	49	83	151	55
	Percentage	7.7%	13.4%	22.7%	41.3%	15.0%
Inadequate Communication Facilities	Frequency	32	50	91	123	70
	Percentage	8.7%	13.7%	24.9%	33.6%	19.1%
No Internet Access in an Office	Frequency	34	30	61	128	113
	Percentage	9.3%	8.2%	16.7%	35.0%	30.9%
No Proper Library Facilities in the Office	Frequency	66	26	50	172	52
	Percentage	18.0%	7.1%	13.7%	47.0%	14.2%

4.22 Strategies Implemented to Overcome Challenges

The findings indicated that the majority of police officers sometimes take efforts to overcome the challenges and find ways to seek information. They learn new languages, support from colleagues to understand the context, connect to concerned authorities and learn new technology and skills. Additionally, they focus on managing time properly.

Table 4.47: Actions taken to overcome the Challenges

		Always 100%	Often 75%	Sometimes 50%	Rarely 25%	Never (Below 25%)
Learn New Languages	Frequency	44	80	182	34	26
	Percentage	12.0%	21.9%	49.7%	9.3%	7.1%
Take Help from Colleagues to Understand the Context	Frequency	76	85	182	18	5
	Percentage	20.8%	23.2%	49.7%	4.9%	1.4%
Contact the Concerned Authority to Obtain Information	Frequency	81	88	158	34	5
	Percentage	22.1%	24.0%	43.2%	9.3%	1.4%
Learn New Technology and Skills	Frequency	96	62	163	36	9
	Percentage	26.2%	16.9%	44.5%	9.8%	2.5%
Proper Time Management	Frequency	102	78	161	18	7
	Percentage	27.9%	21.3%	44.0%	4.9%	1.9%

4.23 Interview Analysis

Information Gathering

The police officers highlighted that they were reliance on various technological resources including Crime and Criminal Tracking Network and Systems (CCTNS), Call Detail Records (CDR), CCTV footage, social media, and human resources, along with medical and forensic reports. The police force has significantly enhanced the access to information by providing numerous sources online and allowing them to compile necessary information in make informed decision. This indicates that the police force is actively working on

cyber security and cybercrime. The Police officers are extremely alert and keep an eye on current and future activities happening around.

Challenges in Utilizing Technology

The police officers stated the significant challenges faced by them in gathering information for crucial investigations. The police officers found difficulties in retrieving print and older records due to inadequate record-keeping practices. While they stated that the current information is readily accessible through systems like CCTNS. The lack of skilled staff often found difficulties in retrieving digital data. Moreover, obtaining Call Detail Record (CDR) analysis from service providers can be a clumsy process, with officers frequently seeking assistance from more experienced colleagues or third-party experts.

Collaboration with Agencies

The police officers emphasized on the critical need for the police force to maintain constant connectivity with various agencies to obtain information related to ongoing cases. Police officers require diverse range of data, including medical reports, call details, forensic analyses, handwriting assessments, cyber expertise and bank account and transactional details. The police officers often contact directly to the Brihanmumbai Municipal Corporation (BMC), hospitals, forensic laboratories, banks, non-governmental organizations (NGOs), and call service providers. The collaboration among police officers and external agencies is crucial for fulfilling the diverse information requirements for effective law enforcement.

Community Engagement in Information Gathering

Citizens play a crucial role in the effectiveness of law enforcement and community safety. The police officers stated that the conscientious and aware citizen help the community and police to maintain the law and order and peace in the society. Individuals often report illegal activities happening around them like drug consumption and noise pollution. This willingness to communicate not only aids in crime prevention but also fosters a collaborative relationship between the community and law enforcement, ultimately contributing to a safer environment for everyone.

CHAPTER 5

FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Major Findings

5.1.1 Demographic Information of Police Officers

Through survey method the quantitative data was collected from 5 Senior Police Inspector (Sr. PI), 44 Police Inspector (PI), 31 Assistant Police Inspector (API), 132 Police Sub Inspector (PSI) and 154 Assistant Police Sub Inspector (ASI). Through interview method the qualitative data was collected from 8 Senior Police Inspector (Sr. PI). The results indicated that the majority of the police officers were male and very few were female police officers. It was found that majority of the police officers completed their graduation and few have completed post-graduation. Very less number of police officers passed HSC and SSC.

5.1.2 Overview of Police Working Branches

It results indicated that most of the police officers (78.7%) were working in police station which indicates that the police officers work completely into handling crime and criminal cases, patrolling and bandobast. The very few police officers were from crime branch, cyber-crime, anti-narcotics cell, economic offense wing, crime detection unit, traffic branch, special branch, social cell for women branch, riot control unit and general.

5.1.3 Understanding the Purpose of Police Officers' Information Needs

The large number of police officers needed information for strengthening the decision for the cases they were investigating, solving cases, catching thieves/criminals, preventing crimes, solving queries of people. Apart from these police officers also always need information for updating personal knowledge, continuing further education, sharing knowledge with colleagues, getting promotion and for personal needs. This indicated that all sorts of information are crucial for police officers which enable them to work proficiently.

5.1.4 Accessibility of On-Demand Information for Investigator Officers

The findings indicated that the majority of the of Senior Police Inspectors (Sr. PI) consistently received the necessary information whenever they require. The significant portion of the sample frequently received information whenever they require. Similarly, Assistant Police Inspectors (API), Police Sub Inspectors (PSI) and Assistant Police Sub Inspectors (ASI) consistently received information whenever there was a requirement. This indicated that police officers get information whenever there is a need for information related to cases.

5.1.5 Types of Core Information for Effective Professional Work

The police officers required criminal records, crime records, forensic records, medical records, disputer matter records, financial matter records, industrial matter records, motor vehicle information, legal information, GPS records and cybercrime records. This indicated that these types of information are extremely useful for police officers for their day-to-day activities such as handling cases, investigating cases, preventing crimes and maintain law and order all over the city.

5.1.6 Library Utilization Among Police Officers

As academic information is stored in libraries, the police officers were asked to give their response on use of libraries for professional work. The majority of the police officers said that they never use libraries for the professional information needs. This indicated that the majority of the libraries do not have the information which could be useful for police officers. The libraries might be having laws and acts related books which can be referred by police officers to understand the laws for the investigation.

5.1.7 Types of Libraries used by Police Officers

The police officers never used public libraries, university/institute libraries, private libraries, special libraries and archival libraries. On the other hand, majority of the police officers were using online libraries.

5.1.8 Effective Utilization of Resources for Daily Information

Utilization of resources depends on the quality and accessibility of the resources. The majority of the police officers agreed that the use of all the police related resources was very high. But the journals and magazines were the least used resources.

5.1.9 Key strategies for Effectively Beginning the Information Search

Majority of the police officers most of the time approached human resources such as victims, culprits, witness, patrol officers, informers and citizens to start their search for investigation. Police officers also indicated that most of the time they approached their seniors such as ACP, DCP, etc for starting the investigation, discussed the cases with their colleagues, accessed available online information databases, used social media to begin their search and searched information in printed resources.

5.1.10 Understanding the Time Involved in Locating and Retrieving Information for Optimal Workflows

It was found that criminal records and crime records can be located in less than a day. The forensic records take more than a month. The medical records, dispute matters, financial matters and industrial matters can be located in a week. The motor vehicle information and legal information can be retrieved in less than a day. It was also found that it can take a day also for some cases. The police officers also said that GPS records can be located in a day. The majority of the police officers said that cybercrime records can be retrieved in a week but few other police officers indicated that it can be retrieved in a day also. The overall findings for locating information revealed that duration for locating information is completely dependent on the information needs but for some very common cases the information can be retrieved in a specific time as per availability of the information.

5.1.11 Measuring the Frequency of Information Resources Utilization in Professional Environments

The information seeking process includes utilization of resources. The police officers need variety of information as per the need of the case filed in police stations. It was observed that majority of police officers always used the Modus Operandi Bureau, National Crime Record Bureau (NCRB), Bureau of Police Research and Development (BPRD), legal documents, official gazette and official circular and memos for investigation. The resources have the significant information which may connect police officers and police stations for investigation

of cases. The police officers needed primary information from primary sources such as human sources. The findings showed that the police officers always collected information from human sources including Victims, Culprits, Witness, Patrol officers, Informers and Citizens for investigation.

In the digital era, the digital databases and record sets have significant information which is required by police officers on daily basis. It was observed that majority of the police officers always used Crime and Criminal Tracking Network System (CCTNS), Call Detail Record (CDR), Cyber and Information Security (C&IS) Division, Mumbai Police website, E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa and Judgments Websites for finding information for investigation.

The mobile applications are accessed and used by most of the people. The police officers also use some specific mobile application which have restricted access to police officers only and some applications can be accessed by any person. It was observed that majority of the police officers always used Court Checker, e-Courts and iRAD for findings information to go ahead with investigation and court hearings.

The cybercrimes have increased a lot in the digital era. The police officers always used Websites and sometimes used Blogs, WhatsApp, Facebook, Twitter, Instagram and Telegram for investigating cybercrimes. They always used emails for communicating information among other police stations. It was observed that knowledge materials such as books newspapers, journals and magazines also always used resources. The findings indicated that police officers make greater use of majority of the resources available for them for investigation.

5.1.12 Accessing Information Through Various Channels

The resources available for police officers have some restrictions on accessing it. The police officers can access the databases and datasets in the police station only. The other resources can be accessible from anywhere and through different channels. The findings revealed that majority of the police officers accessed Modus Operandi Bureau from office record room. The National Crime Record Bureau (NCRB) and Bureau of Police Research and Development (BPRD) accessed through websites and police officers accessed legal documents from office record room. The majority of police officers accessed official gazette from websites, official circular and memos from office record room. The police officers accessed personal documents from office record room.

The police officers indicated that they accessed Crime and Criminal Tracking Network System (CCTNS) and Call Detail Record (CDR) from office record room only. Similarly, police officers accessed Cyber and Information Security (C&IS) Division from their office record room. The police officers accessed E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa, Judgments Websites and knowledge materials accessed through websites.

5.1.13 Evaluating Information Sources and Ensuring Information Accuracy

Considering the importance of accuracy of information, it was found that police officers always checked accuracy and reliability of information available in the information sources. The majority of police officers said that they evaluated the information sources by checking the reliability of the information, checking the accuracy of the information available in the sources. They examined the date on which the information was produced and gathered, the relation to the matter of cases and checked the significance of the information.

5.1.14 Assessing the Adequacy of Information Sources for Effective Task Completion Processes

Several factors increase the usage of resources. Therefore, the adequacy of resources is important. The police force has made available the lot of information and sources in online form. The researcher found out that the majority of the police officers said that Modus Operandi Bureau (MOB), National Crime Record Bureau (NCRB) and Bureau of Police Research and Development (BPRD) were completely adequate. This indicated that these resources effectively meet the information needs of police officers.

The police officers indicated that the legal materials including legal documents, official gazette and official circular and memos were completely adequate. The primary resources such as human sources, victims, culprits, witnesses, patrol officers, informers and citizens provided completely adequate information. The personal documents-In- service training documents were completely adequate.

The police officers were also asked to express their opinion about the adequacy of databases and records sets. As police force have implemented technology into the work, it was necessary to check the adequacy of databases and record sets. Majority of police officers have indicated that the Crime and Criminal Tracking Network System (CCTNS), Call Detail Record (CDR), Cyber and Information Security (C&IS) Division, Mumbai Police website, E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa and Judgments Websites, mobile applications including Court Checker, e-Courts and iRAD were completely adequate. The social media platforms also help police officers to track criminal and their other information. The majority of the respondents Websites, Blogs, WhatsApp, Facebook, Twitter, Instagram, Telegram and Emails were also completely adequate. The study also revealed that few respondents said that Blogs, Twitter, Instagram and Telegram were partially adequate. The knowledge materials including books, newspapers, journals and magazines were also completely adequate, on the other hand few respondents also indicated that the journals and magazines were partially adequate.

5.1.15 Satisfaction with Online Facilities of Databases Provided by Mumbai Police

It was observed that majority of police officers were satisfied with the online facilities of databases provided by Mumbai Police. This indicated that the information is available in the databases is absolutely useful for the police officers and fulfil the cases and investigation related needs of police officers.

5.1.16 Enhancement of Knowledge for Professional Growth

The findings of the revealed that police officers improved their knowledge with help of continuous investigation, by reviewing similar cases, discussion about the cases and issues with the seniors and colleagues.

The majority of police officers used social media to enhance their professional knowledge regarding cybercrimes. Similarly, the majority of police officers used to read news, laws, regulations and acts to improve their professional knowledge. The large number of police officers also visited the court sessions and attended training programmes/workshops to have good professional knowledge.

5.1.17 Essential Guidance for Effectively Seeking Information

The researcher found out that the Mumbai police force very rarely conducted training programmes on human resources, Cyber and Information Security (C&IS) Division, E-challan - Digital Traffic/Transport Enforcement

Solution/Parivahan Sewa, Judgments Websites, Court Checker, e-Courts and iRAD. Though the majority of police officers have said Mumbai police force very rarely conducted training programmes, it was found that the other police officers also indicated that Mumbai police force conducted training programmes frequently. The majority of police officers indicated that Mumbai police force frequently conducted training programmes on Criminal Tracking Network System (CCTNS) and Call Detail Record (CDR).

5.1.18 Assessing Satisfaction Levels with the Effectiveness of Conducted Programs

It was observed that the majority of police officers were satisfied with the programmes/workshops organized on professional skills, soft skills, computer and software trainings, awareness programmes and upgrading knowledge by the Mumbai police.

5.1.19 Enhancing Skills Through Master Training Programs on Information-Seeking Strategies

The findings indicated that the 100% Senior Police Inspector (Sr. PI) have said that the training programmes were desperately needed. Similarly, majority of the Assistant Police Inspector (API), Police Sub Inspector (PSI) and Assistant Police Sub Inspector (ASI) desperately needed the training programmes on information seeking strategies.

5.1.20 Understanding the Need for Equipped Information in Police Force

The police officers have indicated that they needed equipped information to identify the suspects and gather adequate evidence. The equipped information helped police officers to investigate the cases effectively and efficiently. The adoption of technology made police officers work smoothly. The equipped information and efficient investigation process made them learn and understand the new ways of investigating crimes. The police officers have said that the lack of technological knowledge and information may create difficulties in helping citizens with related to cybercrimes. The equipped information helped police officers to prevent crimes.

5.1.21 Challenges Faced while Seeking Information by Police Officers

The challenges make the work difficult and delay in finishing the work. For police officers it is important that they get the correct and relevant information on time, it helps them to investigate the case faster and collect evidences to submit in a court for further procedure. It was observed that majority police officers rarely faced challenges such as non-availability of information in known language, non-availability of required information in digital format, irrelevant information, non-availability of confidential information and restricted access to available information.

Similarly, they rarely faced challenges such as insufficient resources, lack of knowledge of online search strategies, insufficient time to search for information because of too much work pressure, scattered information, unorganized information, missing information, lack of support from higher authority to seek information and lack of technical knowledge. The majority of police officers agreed that they rarely faced challenges including lack of support from technical staff, lack of awareness to locate appropriate and required information, inadequate communication facilities, no internet access in an office and no proper library facilities in the office. This indicated that the police force has equivalent information sources, facilitates, services and coordination among the police officers. As the findings indicated that majority of police officers rarely faced challenges but there were few

police officers who have always, often and sometimes faced the challenges. The police officers also indicated that they found difficulties in getting print and old information due to poor record keeping.

5.1.22 Effective Actions taken to Overcome the Challenges

The study observed that majority of police officers sometimes taken actions to overcome the challenges such as learning new languages, taking help of colleagues to understand the context, contacting concern authority to obtain information, learning new technology and skills and managing time. This indicated that those police officers have faced challenges they were taking actions precisely to over the challenges.

5.2 Hypotheses Testing

The information needs and information seeking behaviour of police officers were analysed and studies. The thoughts of Senior Police Inspector (Sr. PI) were also considered while studying information needs and information seeking behaviour.

Hypothesis 1

- H0= There is no significant difference between the police designation and information needs of Mumbai Police
- H1= There is a significant difference between the police designation and information needs of Mumbai Police

• Table 6.1: Ranks test of Kruskal Wallis

	Designation	N	Mean Rank
To Strengthen Work in Decision Making	Senior Police Inspector	5	175.90
	Police Inspector	44	196.50
	Assistant Police Inspector	31	173.53
	Police Sub Inspector	132	186.85
	Assistant Police Sub Inspector	154	179.17
	Total	366	
To Solve Cases	Senior Police Inspector	5	212.10
	Police Inspector	44	187.45
	Assistant Police Inspector	31	166.81
	Police Sub Inspector	132	193.27
	Assistant Police Sub Inspector	154	176.43
	Total	366	
To Catch Thief/Criminal	Senior Police Inspector	5	221.30
	Police Inspector	44	193.30
	Assistant Police Inspector	31	164.16
	Police Sub Inspector	132	189.56
	Assistant Police Sub Inspector	154	178.18
	Total	366	

To Prevent Crimes	Senior Police Inspector	5	215.00
	Police Inspector	44	176.73
	Assistant Police Inspector	31	180.61
	Police Sub Inspector	132	185.56
	Assistant Police Sub Inspector	154	183.23
	Total	366	
To Solve Queries of People	Senior Police Inspector	5	206.40
	Police Inspector	44	181.09
	Assistant Police Inspector	31	180.26
	Police Sub Inspector	132	188.42
	Assistant Police Sub Inspector	154	179.88
	Total	366	
To Update Personal Knowledge	Senior Police Inspector	5	131.00
	Police Inspector	44	194.80
	Assistant Police Inspector	31	176.81
	Police Sub Inspector	132	185.73
	Assistant Police Sub Inspector	154	181.42
	Total	366	
To Continue Further Education	Senior Police Inspector	5	236.10
	Police Inspector	44	207.00
	Assistant Police Inspector	31	160.18
	Police Sub Inspector	132	185.61
	Assistant Police Sub Inspector	154	177.96
	Total	366	
To Share Knowledge with Colleagues	Senior Police Inspector	5	194.30
	Police Inspector	44	190.33
	Assistant Police Inspector	31	173.29
	Police Sub Inspector	132	183.90
	Assistant Police Sub Inspector	154	182.91
	Total	366	
To Get Promotion	Senior Police Inspector	5	241.60
	Police Inspector	44	185.24
	Assistant Police Inspector	31	164.74
	Police Sub Inspector	132	186.64
	Assistant Police Sub Inspector	154	182.20
	Total	366	
To Get Information for My Personal Need	Senior Police Inspector	5	214.20
	Police Inspector	44	203.31
	Assistant Police Inspector	31	171.45
	Police Sub Inspector	132	182.31
	Assistant Police Sub Inspector	154	180.29
	Total	366	

Table 6.2: Statistical Test ^{a b}

	To strength en work in decision making	To solv e case s	To catch thief/ crimin al	To preve nt crime s	To solve querie s of peopl e	To update personal knowled ge	To continu e further educati on	To share knowled ge with colleagu es	To get promoti on	To get informati on for my personal need
Chi-Squar e	2.208	4.407	4.854	1.251	1.147	3.135	6.848	.725	3.344	3.319
df	4	4	4	4	4	4	4	4	4	4
Asym p. Sig.	0.698	0.354	0.303	0.870	0.887	0.536	0.144	0.948	0.502	0.506
a. Kruskal Wallis Test										
b. Grouping Variable: Designation										

The Kruskal-Wallis test results computed for various information needs of Mumbai police officers, including decision-making, solving cases, catching criminals, preventing crimes, and other tasks, the p-values are greater than 0.05. This indicating no significant association between police designation and information needs. The null hypothesis (H₀) stated there is no significant difference between police designation and information needs is retained at 0.05 significance level and the alternative hypothesis (H₁) is rejected. Therefore, the designations within the police force do not significantly affect their information requirement.

Hypothesis 2

- H₀= There is no significant relationship between police units and specific types of resources used by the Mumbai Police.
- H₁= There is a significant relationship between police units and specific types of resources used by the Mumbai Police.

Table 6.3: Mean Ranks

Question	Working Branch	N	Mean Rank
Which of the following resources do you use to meet your daily information needs? Organization/ Bureau- Modus Operandi Bureau	Police Station	288	184.04
	General	5	119.00
	Crime Branch	28	166.79
	Cyber Crime	10	233.80
	Crime against Women unit	3	169.83
	Anti-narcotics cell	7	119.00
	Anti-human trafficking unit	6	240.33
	Economic offense wing	9	239.61
	Crime detection unit	5	119.00

	Traffic branch	2	224.75
	Special branch	2	224.75
	Riot control unit	1	119.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Organization/ Bureau- National Crime Record Bureau (NCRB)	Police Station	288	184.60
	General	5	121.00
	Crime Branch	28	148.14
	Cyber Crime	10	217.40
	Crime against Women unit	3	201.83
	Anti-narcotics cell	7	164.43
	Anti-human trafficking unit	6	239.33
	Economic offense wing	9	208.67
	Crime detection unit	5	202.20
	Traffic branch	2	236.50
	Special branch	2	197.00
	Riot control unit	1	121.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Organization/ Bureau- Bureau of Police Research and Development (BPRD)	Police Station	288	184.51
	General	5	107.50
	Crime Branch	28	148.21
	Cyber Crime	10	262.45
	Crime against Women unit	3	191.00
	Anti-narcotics cell	7	146.64
	Anti-human trafficking unit	6	206.17
	Economic offense wing	9	207.00
	Crime detection unit	5	183.50
	Traffic branch	2	316.25
	Special branch	2	176.00
	Riot control unit	1	107.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Legal materials- Legal documents	Police Station	288	182.43
	General	5	144.50
	Crime Branch	28	177.45
	Cyber Crime	10	200.60
	Crime against Women unit	3	144.50
	Anti-narcotics cell	7	167.64
	Anti-human trafficking unit	6	204.75
	Economic offense wing	9	188.83
	Crime detection unit	5	209.30
	Traffic branch	2	244.25
	Special branch	2	244.25
	Riot control unit	1	364.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Legal materials- Government documents (e.g. official gazette)	Police Station	288	179.05
	General	5	118.50
	Crime Branch	28	160.70
	Cyber Crime	10	288.15
	Crime against Women unit	3	168.17
	Anti-narcotics cell	7	228.29
	Anti-human trafficking unit	6	246.58
	Economic offense wing	9	180.94
	Crime detection unit	5	178.10
	Traffic branch	2	342.00
	Special branch	2	238.75
	Riot control unit	1	359.00
	Total	366	
Which of the following resources do you use to meet your daily	Police Station	288	183.55
	General	5	112.50

information needs? Legal materials- Official circulars and memos	Crime Branch	28	157.21
	Cyber Crime	10	219.30
	Crime against Women unit	3	162.83
	Anti-narcotics cell	7	260.50
	Anti-human trafficking unit	6	224.00
	Economic offense wing	9	153.28
	Crime detection unit	5	155.70
	Traffic branch	2	296.00
	Special branch	2	236.50
	Riot control unit	1	263.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Primary Sources- Human sources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)	Police Station	288	179.54
	General	5	139.50
	Crime Branch	28	184.55
	Cyber Crime	10	233.35
	Crime against Women unit	3	139.50
	Anti-narcotics cell	7	187.64
	Anti-human trafficking unit	6	195.67
	Economic offense wing	9	267.39
	Crime detection unit	5	173.20
	Traffic branch	2	223.75
	Special branch	2	139.50
	Riot control unit	1	349.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Personal documents- In-service training documents	Police Station	288	184.87
	General	5	108.50
	Crime Branch	28	140.95
	Cyber Crime	10	239.60
	Crime against Women unit	3	155.33
	Anti-narcotics cell	7	266.36
	Anti-human trafficking unit	6	155.33
	Economic offense wing	9	205.50
	Crime detection unit	5	136.60
	Traffic branch	2	231.25
	Special branch	2	211.50
	Riot control unit	1	354.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Crime and Criminal Tracking Network System (CCTNS)	Police Station	288	182.28
	General	5	152.00
	Crime Branch	28	197.43
	Cyber Crime	10	152.00
	Crime against Women unit	3	152.00
	Anti-narcotics cell	7	176.71
	Anti-human trafficking unit	6	214.75
	Economic offense wing	9	239.06
	Crime detection unit	5	192.70
	Traffic branch	2	152.00
	Special branch	2	152.00
	Riot control unit	1	152.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Call Detail Record (CDR)	Police Station	288	182.69
	General	5	135.00
	Crime Branch	28	173.89
	Cyber Crime	10	135.00
	Crime against Women unit	3	187.83
	Anti-narcotics cell	7	225.57
	Anti-human trafficking unit	6	195.50
	Economic offense wing	9	243.61

	Crime detection unit	5	175.90
	Traffic branch	2	249.00
	Special branch	2	237.25
	Riot control unit	1	293.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Cyber and Information Security (C&IS)	Police Station	288	180.04
	General	5	140.50
	Crime Branch	28	177.46
	Cyber Crime	10	157.75
	Crime against Women unit	3	209.50
	Anti-narcotics cell	7	253.86
	Anti-human trafficking unit	6	169.25
	Economic offense wing	9	235.28
	Crime detection unit	5	244.00
	Traffic branch	2	244.00
	Special branch	2	226.75
	Riot control unit	1	360.00
	Total	366	
	Police Station	288	184.10
	General	5	122.50
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Mumbai Police website	Crime Branch	28	188.18
	Cyber Crime	10	153.50
	Crime against Women unit	3	174.17
	Anti-narcotics cell	7	188.93
	Anti-human trafficking unit	6	188.67
	Economic offense wing	9	263.06
	Crime detection unit	5	122.50
	Traffic branch	2	122.50
	Special branch	2	200.00
	Riot control unit	1	122.50
	Total	366	
	Police Station	288	179.15
	General	5	165.10
	Crime Branch	28	175.54
	Cyber Crime	10	222.25
Which of the following resources do you use to meet your daily information needs? Databases/Websites- E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa	Crime against Women unit	3	184.67
	Anti-narcotics cell	7	245.36
	Anti-human trafficking unit	6	249.83
	Economic offense wing	9	223.83
	Crime detection unit	5	116.50
	Traffic branch	2	218.75
	Special branch	2	218.75
	Riot control unit	1	359.50
	Total	366	
	Police Station	288	182.14
	General	5	114.00
	Crime Branch	28	171.00
	Cyber Crime	10	229.05
	Crime against Women unit	3	163.50
	Anti-narcotics cell	7	243.86
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Judgments Websites	Anti-human trafficking unit	6	247.00
	Economic offense wing	9	190.33
	Crime detection unit	5	143.70
	Traffic branch	2	114.00
	Special branch	2	227.75
	Riot control unit	1	262.50
	Total	366	
	Total	366	

Which of the following resources do you use to meet your daily information needs? Mobile Applications - Court Checker	Police Station	288	185.88
	General	5	138.00
	Crime Branch	28	182.86
	Cyber Crime	10	173.05
	Crime against Women unit	3	138.00
	Anti-narcotics cell	7	160.43
	Anti-human trafficking unit	6	164.17
	Economic offense wing	9	201.72
	Crime detection unit	5	169.40
	Traffic branch	2	138.00
	Special branch	2	138.00
	Riot control unit	1	352.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Mobile Applications - e-Courts	Police Station	288	186.90
	General	5	134.50
	Crime Branch	28	173.50
	Cyber Crime	10	169.90
	Crime against Women unit	3	134.50
	Anti-narcotics cell	7	156.79
	Anti-human trafficking unit	6	160.50
	Economic offense wing	9	198.39
	Crime detection unit	5	165.70
	Traffic branch	2	134.50
	Special branch	2	212.50
	Riot control unit	1	332.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Mobile Applications - iRAD	Police Station	288	181.72
	General	5	95.00
	Crime Branch	28	149.39
	Cyber Crime	10	238.60
	Crime against Women unit	3	165.17
	Anti-narcotics cell	7	267.57
	Anti-human trafficking unit	6	226.83
	Economic offense wing	9	220.28
	Crime detection unit	5	192.60
	Traffic branch	2	219.00
	Special branch	2	200.25
	Riot control unit	1	268.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Websites	Police Station	288	185.57
	General	5	163.60
	Crime Branch	28	170.05
	Cyber Crime	10	116.00
	Crime against Women unit	3	165.50
	Anti-narcotics cell	7	251.71
	Anti-human trafficking unit	6	215.00
	Economic offense wing	9	201.67
	Crime detection unit	5	116.00
	Traffic branch	2	239.25
	Special branch	2	219.75
	Riot control unit	1	116.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Blogs	Police Station	288	186.42
	General	5	153.80
	Crime Branch	28	158.91
	Cyber Crime	10	119.75
	Crime against Women unit	3	151.83
	Anti-narcotics cell	7	264.50

	Anti-human trafficking unit	6	231.50
	Economic offense wing	9	205.06
	Crime detection unit	5	106.00
	Traffic branch	2	233.75
	Special branch	2	205.25
	Riot control unit	1	106.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - WhatsApp	Police Station	288	186.84
	General	5	129.00
	Crime Branch	28	148.73
	Cyber Crime	10	159.90
	Crime against Women unit	3	180.50
	Anti-narcotics cell	7	211.79
	Anti-human trafficking unit	6	228.50
	Economic offense wing	9	185.44
	Crime detection unit	5	159.90
	Traffic branch	2	247.00
	Special branch	2	228.50
	Riot control unit	1	129.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Facebook	Police Station	288	184.37
	General	5	115.00
	Crime Branch	28	172.46
	Cyber Crime	10	144.90
	Crime against Women unit	3	115.00
	Anti-narcotics cell	7	271.93
	Anti-human trafficking unit	6	233.67
	Economic offense wing	9	200.44
	Crime detection unit	5	144.90
	Traffic branch	2	239.25
	Special branch	2	218.25
	Riot control unit	1	115.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Twitter	Police Station	288	183.44
	General	5	94.00
	Crime Branch	28	160.54
	Cyber Crime	10	139.20
	Crime against Women unit	3	136.83
	Anti-narcotics cell	7	277.93
	Anti-human trafficking unit	6	255.75
	Economic offense wing	9	226.83
	Crime detection unit	5	222.50
	Traffic branch	2	226.00
	Special branch	2	191.50
	Riot control unit	1	94.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Instagram	Police Station	288	187.14
	General	5	92.00
	Crime Branch	28	155.64
	Cyber Crime	10	116.20
	Crime against Women unit	3	132.33
	Anti-narcotics cell	7	234.07
	Anti-human trafficking unit	6	248.75
	Economic offense wing	9	189.06
	Crime detection unit	5	227.30
	Traffic branch	2	225.25
	Special branch	2	188.25
	Riot control unit	1	92.00
	Total	366	

	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Telegram	Police Station	288	185.49
	General	5	94.00
	Crime Branch	28	161.82
	Cyber Crime	10	113.15
	Crime against Women unit	3	157.83
	Anti-narcotics cell	7	261.00
	Anti-human trafficking unit	6	268.83
	Economic offense wing	9	179.11
	Crime detection unit	5	231.10
	Traffic branch	2	226.50
	Special branch	2	189.75
	Riot control unit	1	94.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Emails	Police Station	288	184.38
	General	5	122.50
	Crime Branch	28	178.38
	Cyber Crime	10	142.60
	Crime against Women unit	3	173.00
	Anti-narcotics cell	7	256.21
	Anti-human trafficking unit	6	181.25
	Economic offense wing	9	195.33
	Crime detection unit	5	162.70
	Traffic branch	2	243.75
	Special branch	2	223.00
	Riot control unit	1	122.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Books	Police Station	288	185.11
	General	5	125.50
	Crime Branch	28	163.75
	Cyber Crime	10	180.50
	Crime against Women unit	3	176.50
	Anti-narcotics cell	7	297.43
	Anti-human trafficking unit	6	176.50
	Economic offense wing	9	164.56
	Crime detection unit	5	165.20
	Traffic branch	2	125.50
	Special branch	2	125.50
	Riot control unit	1	353.00
	Total	366	
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Newspapers	Police Station	288	184.09
	General	5	126.50
	Crime Branch	28	169.93
	Cyber Crime	10	184.75
	Crime against Women unit	3	193.17
	Anti-narcotics cell	7	253.14
	Anti-human trafficking unit	6	177.17
	Economic offense wing	9	191.22
	Crime detection unit	5	156.90
	Traffic branch	2	126.50
	Special branch	2	202.50
	Riot control unit	1	326.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Journals	Police Station	288	181.27
	General	5	173.80
	Crime Branch	28	149.27
	Cyber Crime	10	228.60
	Crime against Women unit	3	143.67

	Anti-narcotics cell	7	280.50
	Anti-human trafficking unit	6	228.00
	Economic offense wing	9	135.67
	Crime detection unit	5	299.60
	Traffic branch	2	219.00
	Special branch	2	173.75
	Riot control unit	1	354.50
	Total	366	
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Magazines	Police Station	288	182.07
	General	5	139.90
	Crime Branch	28	138.89
	Cyber Crime	10	235.20
	Crime against Women unit	3	146.17
	Anti-narcotics cell	7	255.36
	Anti-human trafficking unit	6	194.58
	Economic offense wing	9	200.61
	Crime detection unit	5	252.00
	Traffic branch	2	309.50
	Special branch	2	176.00
	Riot control unit	1	353.50
	Total	366	

Table 6.4: Test Statistics^{a,b}

Questions	Chi-Square	df	Asymp. Sig.
Which of the following resources do you use to meet your daily information needs? Organization/ Bureau-Modus Operandi Bureau	20.260	11	0.042
Which of the following resources do you use to meet your daily information needs? Organization/ Bureau-National Crime Record Bureau (NCRB)	13.370	11	0.270
Which of the following resources do you use to meet your daily information needs? Organization/ Bureau-Bureau of Police Research and Development (BPRD)	20.865	11	0.035
Which of the following resources do you use to meet your daily information needs? Legal materials-Legal documents	12.601	11	0.320
Which of the following resources do you use to meet your daily information needs? Legal materials-Government documents (e.g. official gazette)	34.169	11	0.000
Which of the following resources do you use to meet your daily information needs? Legal materials-Official circulars and memos	18.784	11	0.065
Which of the following resources do you use to meet your daily information needs? Primary Sources- Human	23.123	11	0.017

Questions	Chi-Square	df	Asymp. Sig.
sources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)			
Which of the following resources do you use to meet your daily information needs? Personal documents- In-service training documents	24.714	11	0.010
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Crime and Criminal Tracking Network System (CCTNS)	13.076	11	0.288
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Call Detail Record (CDR)	16.501	11	0.124
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Cyber and Information Security (C&IS)	23.276	11	0.016
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Mumbai Police website	14.919	11	0.186
Which of the following resources do you use to meet your daily information needs? Databases/Websites- E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa	18.188	11	0.077
Which of the following resources do you use to meet your daily information needs? Databases/Websites- Judgments Websites	15.292	11	0.169
Which of the following resources do you use to meet your daily information needs? Mobile Applications - Court Checker	10.263	11	0.507
Which of the following resources do you use to meet your daily information needs? Mobile Applications - e-Courts	9.996	11	0.531
Which of the following resources do you use to meet your daily information needs? Mobile Applications - iRAD	19.616	11	0.045
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Websites	15.998	11	0.141
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Blogs	19.394	11	0.054

Questions	Chi-Square	df	Asymp. Sig.
Which of the following resources do you use to meet your daily information needs? Social Media Applications - WhatsApp	12.808	11	0.306
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Facebook	17.869	11	0.085
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Twitter	22.071	11	0.024
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Instagram	19.335	11	0.055
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Telegram	22.507	11	0.021
Which of the following resources do you use to meet your daily information needs? Social Media Applications - Emails	11.670	11	0.389
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Books	22.046	11	0.024
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Newspapers	11.718	11	0.385
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Journals	25.946	11	0.007
Which of the following resources do you use to meet your daily information needs? Knowledge Materials- Magazines	22.372	11	0.022
a. Kruskal Wallis Test			
b. Grouping Variable: Working Branch			

The Kruskal-Wallis test results revealed the significant differences in usage of resources among various units. The resources including Modus Operandi Bureau, BPRD, C&IS, government documents, human sources, in-service training materials, mobile applications like iRAD, social media platforms such as Twitter and Telegram, and knowledge materials like books, journals, and magazines. These differences suggested that each police

unit has unique needs and preferences for these resources which reflected their specialized roles and operational demands.

Therefore, the null hypothesis (H0) stated that there is no significant relationship between police units and types of resources used is rejected and alternative hypothesis (H1) is retained with 0.05 significance level.

On the other hand, resources such as NCRB, legal documents, CCTNS, and several social media applications, there are no significant differences in usage among the police units. This could indicate that these resources are universally important and widely utilized across all units, regardless of their specific functions.

Therefore, the null hypothesis (H0) stated that there is no significant relationship between police units and types of resources used is retained with 0.05 significance level and alternative hypothesis (H1) is rejected.

Hypothesis 3

- H0= There is no significant relationship between the use of information technology and gathering information by Mumbai Police.
- H1= There is a significant relationship between the use of information technology and gathering information by Mumbai Police.

Table 6.5: One-Sample Kolmogorov-Smirnov Test

Question	N	Normal Parameters		Most Extreme Differences		Kolmogorov-Smirnov Z		Asymp. Sig. (2-tailed)
		Mean	Std. Deviation	Absolute	Positive	Negative		
Most of the time host of the time how do you access information resources? Organization/ Bureau- Modus Operandi Bureau	366	2.22	1.175	.272	.257	-.272	5.210	.000
Most of the time how do you access information resources? Organization/ Bureau- National Crime Record Bureau (NCRB)	366	2.07	1.255	.327	.327	-.247	6.251	.000

Most of the time how do you access information resources? Organization/ Bureau- Bureau of Police Research and Development (BPRD)	366	1.88	1.290	.356	.356	-.248	6.802	.000
Most of the time how do you access information resources? Legal materials - Legal documents	366	2.25	1.142	.250	.232	-.250	4.785	.000
Most of the time how do you access information resources? Legal materials - Government documents (e.g. official gazette)	366	2.17	1.190	.273	.273	-.240	5.217	.000
Most of the time how do you access information resources? Legal materials - Official circulars and memos	366	2.17	1.141	.249	.249	-.234	4.761	.000
Most of the time how do you access information resources? Primary Sources- Human sources (Victims, Culprits, Witness, Patrol officers, Informers and Citizens)	366	2.33	1.094	.325	.246	-.325	6.223	.000

Most of the time how do you access information resources? Personal documents - In- service training documents	366	2.33	1.183	.244	.222	-.244	4.673	.000
Most of the time how do you access information resources? Databases/Websites - Crime and Criminal Tracking Network System (CCTNS)	366	3.04	.538	.501	.501	-.428	9.586	.000
Most of the time how do you access information resources? Databases/Websites - Call Detail Record (CDR)	366	2.15	1.122	.294	.280	-.294	5.624	.000
Most of the time how do you access information resources? Databases/Websites - Cyber and Information Security (C&IS)	366	2.25	1.236	.254	.249	-.254	4.864	.000
Most of the time how do you access information resources? Databases/Websites - Mumbai Police website	366	1.68	1.044	.367	.367	-.258	7.031	.000

Most of the time how do you access information resources? Databases/Websites - E-challan - Digital Traffic/Transport Enforcement Solution/Parivahan Sewa	366	1.76	1.032	.302	.302	-.231	5.776	.000
Most of the time how do you access information resources? Databases/Websites - Judgments Websites	351	1.86	1.201	.298	.298	-.238	5.583	.000
Most of the time how do you access information resources? Knowledge Materials	366	1.90	1.030	.300	.300	-.191	5.734	.000

The results from the K-S test for various categories of information resources used by Mumbai Police provide insightful observations. The consistently low p-values across all tested categories robustly indicated that the use of various information technology resources by Mumbai Police significantly enhances their information-gathering processes. Therefore, the null hypothesis (H0) stated the there is no significant relationship between the use of technology and process of gathering information by Mumbai police is rejected and the alternative hypothesis (H1) stated there is a significant relationship between the use of technology and process of gathering information by Mumbai police is retained with 0.05 significance level.

5.3 Conclusion

The information in police force is important in the digital age. Mumbai police require diverse and detailed information to perform their duties effectively. The information ranges from criminal and crime records to GPS, forensic, medical, and cybercrime data, all essential for investigations, solving queries, preventing crimes, personal and professional growth. Despite the need for extensive information, police officers did not find libraries for investigative work, as they lacked relevant materials.

Instead of it, the police officers were relied on specialized resources such as Modus Operandi Bureau, National Crime Record Bureau (NCRB), Bureau of Police Research and Development (BPRD), the Crime and Criminal

Tracking Network System (CCTNS), and the Cyber and Information Security (C&IS) Division, websites, social media, forensic reports, financial reports and mobile applications like iRAD and e-Courts. These resources played significant role in fulfilling daily information needs of police officers. The victims, witnesses and colleagues were vital in shaping their investigations.

The police officer's information seeking behaviour is dependent on the nature and urgency of the required data. Police officers were retrieving information quickly within a day with the help of direct access to some databases and social media content. They also relied on external information sources for more complex data such as medical report, forensic reports and call details. The retrieval process of these resources could take longer time. With the growth of technology, police officers increasingly utilized online resources, databases and mobile applications for investigation. The social media tools like WhatsApp, Twitter, and Telegram became useful tools for gathering and verifying information. The police officers were used to evaluate the accuracy of information and satisfied with the resources available for investigation.

However, despite adequate resources, few police officers encountered challenges such as lack of access to information, time constraints and technical issues. In response they proactively tried to overcome the obstacles through continuous learning, improving technological skills and participating in training programmes.

5.4 Recommendations

- The team of techno savvy police officers should be allotted to each police station to avoid delay in investigating cybercrimes.
- All the police officers should have the proper knowledge of the online databases and information seeking strategies to retrieve information from other resources.
- The sufficient computer and internet facility should be provided to each police station by the Mumbai police force.
- The timely access to Call Detail Records, medical reports, forensic reports and its analysis can make huge impact on the investigation of cases.
- The guidance and subscription to analysing software of the Call Detail Records, medical reports and forensic reports can help police officers to understand it easily. Otherwise, they have to depend on 3rd party or person.
- The systematic arrangement of print documents and evidences in the police stations can help police officers to refer it whenever there is a requirement.
- The systematic work balancing can have a significant impact on police officers in way to reduce stress, improve focus and decision making, increase productivity, job satisfaction and better resource allocation.

5.5 Areas for Future Research

- The present study has not considered the highest positions of police officers such as Commissioner of Police, Special Commissioner of Police, Joint Commissioner of Police, Additional Commissioner of Police, Deputy Commissioner of Police and Assistant Commissioner of Police. The information seeking behaviour of upper positions can be studied.
- The ethics, privacy and legal aspects of information seeking can be studied in depth.
- The information needs and information seeking behaviour in specialized areas can be studied in depth.
- Comparative study of old information seeking behaviour and information seeking behaviour in digital era can be studied in the future.

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I, **Sonali Vhatkar**, hereby declare that:

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This is to certify that the monograph entitled: **“Information Needs and Information Seeking Behaviour of Mumbai Metropolitan City Police”** is prepared by **Sonali Vhatkar** based on the thesis entitled: **“Information Needs and Information Seeking Behaviour of Mumbai Metropolitan City Police”** submitted to **SHPT School of Library Science, SNDT Women’s University** for the award of PhD degree under my guidance.

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About the Monograph

Effective policing depends on timely access to accurate and reliable information. This monograph explores the information needs and information-seeking behaviour of Mumbai Metropolitan City Police, examining the resources, channels, technologies, and practices that support decision-making and public safety. By highlighting how police personnel access, evaluate, and utilize information in dynamic operational environments, the work provides valuable insights into the challenges and opportunities associated with information management in law enforcement. The monograph serves as a useful resource for researchers, librarians, policymakers, police administrators, and professionals seeking to strengthen information systems, enhance institutional support, and promote evidence-based policing.

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