

# **ICT AND FUTURE OF WORK: IMPLICATIONS FOR ECONOMY AND SOCIETY WITH SPECIAL REFERENCE TO POLICING**

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## **INTRODUCTION**

With the advent of Fourth Industrial Revolution<sup>1</sup> each aspect of our life and work is rapidly becoming digitalized and automated. Intelligent systems and appliances are now being used as major tools for strategic planning and decision making across the globe. Information and Communication Technology (ICT) and E-Governance<sup>2</sup> are being introduced in public sector at a fast pace. This is changing the work output and performance efficiency of public sector organizations including police in many ways. Police have globally benefitted from ICT by running systems related to record management, crime investigation, complaint filing and efficient resource allocation over the last few decades. With the integration of Artificial Intelligence<sup>3</sup> in the work sphere of public organizations the whole culture of police work is undergoing a colossal change.

In Pakistan, policing is an important area of governance. Its performance and service delivery has direct impact on socio-economic development of the country. Improvement of law and order and security situation can lead to economic growth and social stability while its deterioration can have equally adverse effects on the economy and society. Since Pakistan has experienced a lethargic e-government growth rate over the last few years due to plethora of political and economic constraints and also due to the deterioration of government institutions (Arfeen & Kamal, 2014), the need to strengthen the tiers of government through ICT and to deliver public services to the key stakeholders has become crucial.

Punjab Police is among the leading organization to have adopted ICT tools and E-Governance within its work culture within the last five years. Several ICT based initiatives were introduced including digitalization of police station record across the Punjab. Launched in March 2017 as a major e-initiative, Electronic First Information Report (E-FIR) has been successfully implemented all over the province. Moreover, the system of filing complaints has also been digitized by creating an online Citizens Complaint Portal (CCP) wherein the citizens can digitally file, track, monitor and

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give feedback on their complaints. Currently, several other

<sup>1</sup>**The Fourth Industrial Revolution** is the fourth major industrial era. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital and biological spheres, collectively referred to as cyber-physical systems. (Schwab, 2016)

<sup>2</sup>**E-Governance** is defined as the process of adapting information and communication technology (ICT) tools for digitizing and automating internal operations of government and for facilitating its external interactions i.e. with citizens and agencies (OECD, 2009).

<sup>3</sup>**Oxford Dictionary** defines **Artificial Intelligence (AI)** as the theory and development of computer systems able to perform tasks normally requiring human **intelligence**, such as visual perception, speech recognition, decision-making, and translation between languages.

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online portals, applications and technologies are being used by Punjab Police on regular basis to carry out day to day official business.

While it has been over two years since the introduction of these e-initiatives, it is an appropriate time to assess the impact of transformation of police from conventional methods to the use of ICT tools of work, their adoptability, utility, and impact on service delivery etc. in the Punjab. This is the first study of its kind and the findings of this study can be used for learning in police establishments across Pakistan.

### **Research Scope**

The objectives of the research are to study the initiatives and steps taken to implement E-Governance and ICT in policing and to understand and evaluate the impact of this technological transformation on police work-culture, service delivery and performance efficiency. The study analyzes the transformation of Punjab Police from conventional work methods and tools to ICT and the results of this transformation. Since FIRs and public complaints are directly related to public service delivery, they can have significant socio-economic implications. Therefore, the impact of E-FIR and CCP will be studied and discussed.

This research poses a single research question: What is the impact of the technological transformation on police work-culture, service delivery and performance efficiency? In order to make rich and in-depth analysis the study has been limited to the implementation of E-FIR and CCP in Gujranwala Police during the last five years. This research is directly related to public policy choices where, in the context of ICT implementation, various possible implications need to be studied for better decision-making and to effectively and efficiently respond to the

challenges faced and posed by this technological transformation and opportunities offered by the Fourth Industrial Revolution.

## **LITERATURE REVIEW**

A large amount of literature is available on the subject of ICT and future of work and its implications for society and economy. It reveals that governments are increasingly moving towards E-Government, whether in developed or in developing countries. In developed countries, the implementation of E-Government initiatives aims more and more at effective service delivery to citizens (Mahmood, 2013). The E-Government paradigm emphasizes coordinated network building, external collaboration, and customer services rather than the

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traditional bureaucratic paradigm, which emphasizes standardization, departmentalization, and operational cost-efficiency.

For many developing countries, successful implementation of E-Government programmes is dependent both on national IT plans and e-readiness assessment plans (Ramnarine and Endeley, 2018). The most significant implementation challenge is perhaps security which requires security solutions like encryption, digital signatures, passwords and user names (Alshehri and Drew, 2010).

Frank and Binpe (2013) examined the role of ICT in effective policing by employing cross-sectional survey method for data collection. The results confirmed that ICT and other technologies improve the performance of the police department.

(Storm, 2017) conducted a study in collaboration with RTI International and Police Executive Research Forum. The objective of the study was to examine the types of technology being implemented by U.S. law enforcement agencies (LEAs) and the extent to which strategic development and structural change of organization is attributed to technological advancement. The findings revealed that majority of large agencies in US are taking help of ICT. However, there is a possibility that even if same technology is implemented in different regions, the degree of the sophistication and usage of technology can be divergent. The study further highlighted that agencies in US are somehow adopting technology only in response to factors such as perceived needs, executive staff decisions and community demand instead of implementing it after some strategic planning. (Jackson, Greenfield, Morral, & Hollywood, 2014) analyzed the potential correlation between information

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technology and the performance of police activities. Logic model was employed to empirically analyze the budgetary and productivity effects of IT investments. The findings confirmed that IT system exerts a significant positive impact on law enforcement. The study further suggested that the role of IT is that of a multiplier to increase potential productivity of police department.

Since digitalization and automation of work in Punjab police is a rather contemporary phenomenon in case of Pakistan, few researchers have studied the impact and implications of this transformation in the socio-economic perspective. The absence of appropriate data for research is the major limitation in this regard. (Ellahi & Manavari, 2010) examined the key determinants behind the acceptance of technology and attitude of police officers towards the use of information and communication technology. The results concluded that psychological

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response and organizational reactions of implementing ICT in police department cannot be neglected if we want to improve the performance of police department otherwise, this extraordinary development rate of Information Technology (IT) can make the economies suffer from additional costs. The study further suggested that the police department and IT policy makers should collaborate for better outcomes. (Perito & Parvez, 2013) argued that the effectiveness and efficiency of police department can be enhanced by improving police-public relation. In this regard, the role of media is significant. One such attempt is by broadcasting police activities in the community and also by reporting district and provincial level news on local television channels. The study further suggested that implementation and adoption of innovative technology is assisting to fighting against criminal violence and terrorism and has also made the process of filing complaints quicker and easier.

The review of literature reveals that there is a serious dearth of knowledge on the subject with special reference to policing in the context of Pakistan. It emerges that no research on implementation of E-Governance in City Police Gujranwala has been conducted so far and this is what this study shall focus upon. Thus the study of City Police Gujranwala in this context is unique and new in its orientation and scope.

### **RESEARCH METHODOLOGY**

For this study a mixed methods approach was adopted to explore the feedback from the field. The quantitative method was applied to study the numerical data pertaining to status of implementation of ICT and the changes brought by this change of work

tools vis a vis trends in crime, service delivery indicators, resolution of public complaints, completion of investigations etc. in order to measure objective outcomes of this transformation. Qualitative method was applied to understand and analyse the challenges of this transformation and its socio-economic impact by conducting key informant interviews, raising and focusing on the relevant aspects of the research question, including but not limited to; How ICT is changing the future of police work? How is ICT influencing the perception of transparency? Why many people still resist this transformation? How is this transformation impacting the society?

Both primary and secondary sources were used for this study. Primary sources include interviews and surveys which have been carried out to collect first hand data from general public and police officials. Citizens and police officials selected from each of the ten police sub-divisions in Gujranwala district, including Qila Didar Singh, Noshehra Virkan, Khiali,

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Cantt, Wazirabad, Satellite town, People's Colony, Kotwali, Kamoke and Model Town, were interviewed and surveyed upon. The secondary sources include books, journals, government policy documents, newspaper articles, websites and research papers.

For data collection Probability sampling technique has been used to conduct surveys for quantitative research while Purposive sampling approach was applied to conduct interviews of key stake-holders i.e., clients or users among general public and complainants of E-FIRs in district Gujranwala and police officers using and operating the online portals. The questionnaire was semi-structured into four components: 1) to assess the impact of E-FIR in terms of service delivery and public satisfaction; 2) to assess the impact of E-FIR on Police work culture; 3) to assess the impact of Citizen Complaint Portal in terms of service delivery and public satisfaction and; 4) to assess the impact of Citizen Complaint Portal on police work culture.

The sample of the study comprised of 190 respondents. Equal number of community members and police officers from each sub-division of district Gujranwala were included in the survey. The first category of questionnaire is filled by 45 citizens who have ever interacted with police department within district Gujranwala; the second category is filled by 45 police officers from the target area; the third category is again filled by 50 citizens and the fourth category is filled by 50 police officers. The data gathered through this survey is entered into an SPSS database and then

frequency tables and cross-tabs have been generated to respond to the key question.

Table 1: Composition of Research Sample Sr No. Survey Category General Public  
Police Officials

## **FINDINGS AND DISCUSSION**

### **E-Governance in Pakistan**

Pakistan passed its first ever National IT Policy in year 2000. With substantial shifts in technology, National IT policy was replaced by Digital Pakistan Policy in 2017. As per United Nations e-government survey, Pakistan ranked 137th out of 192 countries in 2003, 136th in 2005 and 131st in 2008.<sup>4</sup> In 2010, the ranking fell drastically to 146th. Similarly, in 2012, it further dropped to 156th. In 2016, Pakistan stood at 159th position and as per latest measure, the country's position is 148th as of 2018.

### **E-Governance Initiatives in the Punjab**

The Punjab Government has taken multiple initiatives during last five years and also passed Punjab IT Policy in 2018 to automate governance. The major initiatives include: digitization of all police stations in the province; attendance through biometric verification; deployment of Hospital Management Information System (HMIS) at district and tehsil level headquarters (DHQ and THQ); supervision of field staff and monitoring of health, agriculture, livestock, irrigation, education, irrigation through mobile phones; vaccination coverage from 22 percent to 92 percents; digitization of agricultural land record and use of remote sensing techniques using satellite imagery. Moreover, the policy also ensured the integration of law and order initiatives such as traffic management, video surveillance and safe cities project. The Punjab IT policy 2018 further aims to implement some initiatives in years to come which include: provision of trainings on Internet of Things (IoT), setting up regional offices of PITB across the province and provision of free and easily accessible ICT resources to socially vulnerable people in an inclusive manner.

### **ICT Initiatives in Punjab Police**

Punjab Police has taken the lead in embracing new technologies. During the last five years all the police stations of the Punjab have been equipped with ICT infrastructure and personnel. As a major initiative, electronic registration of FIR (E-FIR) has been

successfully implemented all over the province without exception. All the police station record including daily Station Diary

<sup>4</sup> UN e-government survey in Media. Can be viewed at:

<https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/128-Pakistan>

<sup>5</sup> “Punjab passes its first ever IT policy”, Published in MIT Technology review on May 29, 2018. Can be viewed at:

<http://www.technologyreview.pk/punjab-set-to-pass-its-first-ever-it-policy/>

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and progress on investigations has been digitalized and made available online across the Punjab. Currently, different online portals, applications and technologies are being used by Punjab Police on regular basis to carry out day to day official business including Crime Mapping, Police Station Record Management SystemPS, Pakistan Citizen’s Portal (Prime Minister Delivery Unit), IGP Complaint Cell, Tenants Registration System, Hotel Eye System, Bio Metric Identification Devices, Online Beat Book, E-Gadget, Anti Vehicle Lifting System, Human Resource Management Information System, Driving License Management System, Police Kidmat Markaz, Police Khidmat Counter DHQ, Welfare Eye, Pukaar (15), Criminal Record Management System, Video Conferencing, Online Video Surveillance of Police Stations, Front Desk and E-FIR. The whole system is integrated and is centrally monitored by the Inspector General of Police (IGP) office or Central Police Office, Lahore.<sup>6</sup>

Out of all these tools of E-Governance, E-FIR and Citizen’s Complaint Portal are directly related to the public and service delivery. Therefore, it is most important to study and analyse the performance of these two e-initiatives in detail.

### **Electronic First Information Report (E-FIR)**

The process of investigation against each FIR in terms of recovery and arrest has been a huge challenge in the presence of manually maintained records. Starting from FIR registration to culprit nomination, case proceedings till closures, retrieval of FIR requires a lot of time and work. Before the advent of E-FIR, 25 registers were maintained by each Police Station that comprised of crime reports, case diaries and FIRs etc. However, E-FIR launched in March 2017 under smart policing approach, has transformed the conventional methods into a modernized policing regime by introducing an online registration mechanism where police receives complaints through Short Message System (SMS) and voice calls on a short code (8787).<sup>7</sup>

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Moreover, latest Android-based smart phones are loaded with various applications for recording and documenting crime. This technology has replaced the traditional pocket notebooks and has connected citizens with central command room. Now the life cycle of an FIR, from registration to final closure, has been digitalized making tracking and retrieval of case information much easier and quicker than ever before.

6 Source: Punjab Police Website. Can be viewed at <https://www.punjabpolice.gov.pk/>

7 Dogar, A. "Introducing Smart Policing", Published in MIT Technology Review. To be retrieved at:

<http://www.technologyreview.pk/introducing-smart-policing/>

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The system automatically generates e-copies of FIRs and the reports required at all levels of Punjab Police leadership i.e. from Station House Officers (SHOs) to Inspector General of Police (IGP). Moreover, the process is integrated with other policing online applications. The project is operational in all the 714 police stations across the province.<sup>8</sup> Since its launch 878,000 E-FIRs have been registered in the Punjab which were 311,895 in 2016.<sup>9</sup> This shows the acceptability and adaptability of the program.

Front desks being run by a civilian male and a female officer of Information Technology branch have been established to facilitate the applicants across the Punjab province. Using Complaint Management System (CMS) software, e-tags are issued to the visitors after receiving their complaints which are directly monitored by senior supervisory officers till the issue reaches its logical conclusion. So far 4.2 million complaints have been entertained across the Punjab using this application software<sup>10</sup> and 2.3 Million FIRs have been entered into the system.<sup>11</sup>

The supervisory officers can see status of a particular case and can also obtain other information like case diaries, sureties, names and gender of victims and accused, challan date, next date of hearing, gender of victims etc. All complaints have to be resolved in a stipulated time period by the concerned police staff. The high-ups monitor all the entries made at police station level and analyze the public feedback and ratio of complainants satisfied with police performance in resolving their complaints. Monitoring of complaints ensures that complaints are being cleared in a timely manner and no complaint is disposed of without valid or justified reason by the concerned investigation officers. Complainants can check the status of their

complaints online using particular complaints credentials given to them at the time of entering a complaint. The E-FIR uses a QR code as well which eliminates the fabrication of fake FIRs.

E-FIR is integrated with several other e-policing applications. Sharing of data by different applications ensures that record is integrated and safe from anomalies. Integration of E-FIR with other applications has enormously helped in detection of cases, arrests and recovery of case properties. Status of criminals is recorded permanently in the system software which helps in identification and arrest of accused by generating notifications in different applications like Tenant Registration System, Hotel Eye etc. Reports generation is much easier now and saves

8 PITB official website. Can be viewed at: <https://pitb.gov.pk/efir>

9 PITB official website. Can be viewed at: <https://pitb.gov.pk/efir>

10 PITB official website. Can be viewed at: <https://punjabpolice.gov.pk/psrms>

11 Punjab police, government of Punjab, To be retrieved at: <https://punjabpolice.gov.pk/psrms>

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a lot of time as there is no need to go through the bundle of manual registers for compiling analytical reports.<sup>12</sup>

### **Citizen's Complaint Portal (IGP Complaint Centre-8787)**

One of the initiatives of Punjab Police is the establishment of an integrated IGP Police Complaint Center. Previously the complaints were received through post or in person. Now the public can lodge their complaints through SMS and voice calls on a short code (8787). Moreover, complaints are also received online as well as through emails. Following nature of complaints are entertained at the IGP Complaints Center: non-registration of FIRs, faulty investigations, illegal detentions, arrests of innocent persons, registration of false FIR, slackness in duty and demand of illegal gratification.

All complaints are sent to senior ranking officers for due action and in any case they are not marked to an officer below the rank of a Sub Divisional Police officer, who is bound to call the complainant himself within 8 hours and report progress to the IGP Complaints Center. Moreover, these officers have to send their final reports within stipulated timelines. For complaints of Illegal detentions and demand of illegal gratification the replies have to be submitted within 24 hours. Similarly, for complaints of Non-Registration of FIRs and Arrests of innocent persons the replies

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have to be submitted within 72 hours, and for rest of the types of complaints the reports are to be submitted within two weeks. Replies received from respective offices are cross checked by the staff at Police Complaints Center by making telephonic calls to the complainants. In case of any ambiguity or the complainant has expressed dissatisfaction regarding the reply, the matter is sent to a senior officer for verification. The complaint is not disposed of till it is either redressed or has proven to be false after verification by a senior officer. So far, 141,521 complaints have been entertained across the Punjab, out of them 136,304 have been disposed of.<sup>13</sup>

**E-Policing in Gujranwala District: Findings from the Field**

Gujranwala is one of the prominent industrial cities of Pakistan. It is the 5th largest city of the Punjab and 7th amongst the most populous cities of Pakistan with over half a million workers<sup>14</sup>

<sup>12</sup> Finding based on Interview with Data Processing Officer, Gujranwala Police, 2019

<sup>13</sup> Punjab Police Website accessed on 28.12.2019. Date retrievable at [https://www.punjabpolice.gov.pk/igp\\_complaint\\_center\\_8787](https://www.punjabpolice.gov.pk/igp_complaint_center_8787)

<sup>14</sup> Gujranwala's role in national economy. Published in Dawn on Aug 17, 2016 <https://www.dawn.com/news/206246>

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deployed in different industrial units of the city. Moreover, its share in national production is 9 percent and in revenue, it is 8 percent.<sup>15</sup> This section undertakes an in-depth analysis regarding the role of e-policing in ensuring law and order condition in Gujranwala and its impact on user satisfaction index, public satisfaction index, trends in crime, service delivery indicators, resolution of public complaints and completion of investigations etc. In this backdrop, the present study analyses the impact of E-FIR and Citizens Complaint Portal in terms of service delivery, public satisfaction, police work culture and efficiency in Gujranwala.

**E-FIR from Complainants' Perspective**

**E-FIR vs. Conventional FIR**

To analyze the progress and prospects of E-FIR in Gujranwala, respondents were asked how they find E-FIR better than conventional system, 71.1% of the citizens responded that current E-FIR system is better as it is fast and efficient. 16% of the citizens responded that it is easy now to lodge a complaint and to avail of quick response from police officers. 4.4% of the citizens responded that E-FIR is better as

it does not involve any involvement of reference of third party. Another 4.4% of the citizens responded that E-FIR is better because FIR record can be summarized and retrieved at any point of time.

Figure 1: How E-FIR is better than conventional system (Public Feedback)

Source: Author's own illustration based on primary data analysis

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### **E-FIR and Public Satisfaction**

When it comes to technology, an important question to be addressed is the absorption level of technology. However, in our case, the findings based on primary data collected through survey revealed that 68% of the citizens who have ever interacted with police department had basic computers skills and 32% of the citizens completely lacked computers skills. Yet, none faced any difficulty dealing with online portal. The major reason behind this is the cooperative and well educated front desk staff hired to promote e-policing. In this backdrop, citizens were asked if they are satisfied with the performance of police.

The results shown in table 2 show that 77.8% of the citizens confirmed that the efficiency of police department in Gujranwala has been significantly improved since the augment of ICT in police department. Besides, one of the major indicators of improvement in police efficiency is the reduction in time gap between getting FIR registered and action taken on it by the department. Our findings revealed that 73.3% of the citizens were of the view that the time gap has been substantially reduced. 22.2% of the respondents responded that it has been reduced but there is still room for improvement.

Table 2: Impact of E-Policing on public satisfaction Response Percent

### **Cons of conventional FIR**

When sample population was asked about the problems they faced dealing with conventional FIR system, around 58% of the citizens opined that the previous system was too slow and time consuming, 15.5% of the citizens reported unnecessary delays to be the major barrier and 15.6% of the citizens responded that conventional FIR involved relatively greater opportunity cost of time and money in the form of visiting the police station personally and undergoing various formalities.

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Figure 2: Problems faced by citizens while getting conventional FIR registered

Source: Author's own illustration based on primary data analysis

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## **E-FIR from Police Officers' Perspective**

### **E-FIR and Police Efficiency**

Our study gave police officers working in different police stations of Gujranwala using these e-applications to evaluate the performance of E-FIR system with the objective to analyze their satisfaction level. 80% of the police officers were of the view that efficiency of the police department has been significantly improved. 15.6% of the officers responded that E-FIR is convenient and easy to access. And 4.4% of the officers responded that it has now become relatively easier to lodge a complaint and to avail of quick response from police officers.

Figure 3: Impact of E-FIR on Police Efficiency (Police Feedback)

Source: Author's own illustration based on primary data analysis

### **E-FIR & Transparency**

Respondents from both public and police agreed that there is significant improvement in the efficiency and performance of police department. 98% of the police officers responded that digitization of FIR has made the system more transparent. It has made FIR readable not only for complainants but also for higher officials who can directly check the progress of each registered FIR. Moreover, the copies of E-FIR can directly be taken from front desk.

### **E-FIR & Crime Rate**

E-FIR portal also includes a proclaimed offender credentials section, which has made it very easy to track the offenders, using e-policing tools. Moreover, the status of the criminal remains recorded permanently in the system integrated with several other e-portals of police. This helps in timely identification and arrest of accused using smart applications like Tenant Registration System, Hotel Eye, Criminal Record Management System etc. Police officers were asked if the introduction of E-FIR has impacted the crime rate in their area. 80% of the police officers are of the view that crime rate in the target areas has declined. However, 20% of the officers were of the view that e-policing has not exerted any significant impact on crime rate.

Figure 4: The impact of E-Policing on crime rate (Police Feedback)

Source: Author's own illustration based on primary data analysis

Reduction in crime rate has various socio-economic implications for district Gujranwala as it

is the leading industrial city of the Punjab with huge industrial workforce and

enormous commercial activity taking major share in national production and revenues. In such an economically flourishing city, markets take reduction in crime rate as a good news. In this regard, 99% of our respondents confirmed that because improvement in law and order situation resulting from e-policing, confidence level of markets has also been increased.

### **E-FIR & Challenges Faced by Police Department**

The increase in police efficiency and quick responsiveness involves various challenges faced by police.

Around 59% of the police officers have argued that e-policing has made dealing with registered

complaints a time bound procedure for police officers which although ensures timely disposal of

complaints yet at times does not allow them to do justice with the investigations of cases. Slow internet

is also considered one of the major challenge that hampers the connectivity of the police with online

portals thereby compromising efficiency. However, 23% of the officers responded that they find the

system rather useful, 19% of the officers responded that they have not faced any challenge so far. Figure

5 shows the response by police officers when asked if E-FIR has made them deal with challenges.

Figure 5: Challenges faced by police department after the introduction of E-FIR

Source: Author's own illustration based on primary data analysis

### **Citizens Complaint Portal from Complainants' Perspective**

The following table shows the number of complaints that have been received via phone call or SMS using short code "8787" in district Gujranwala. The table below clearly reveals that the complaints of one year are resolved instantly without delaying them to next year.

Table 3: IGP Complaint Cell - Performance of District Gujranwala Year Total

Received Resolved Pending

Source: City Police Office Gujranwala, 2019

### **Citizens Complaint Portal Vs. Conventional System**

Present study has made an attempt to analyze the extent to which citizens as well as police officers are satisfied with this online portal. Our results reveal that 61.5% of the citizens from district Gujranwala declared Citizens Complaint Portal to be better, faster and more efficient system than conventional system. 17.1% of the citizens responded that it is easy now to lodge a complaint without visiting police station and to avail of the quick response from police department. 7.7% of the respondents responded that E-FIR is better because FIR record can be summarized at any point of time which has minimized the risk associated with data misplacement. 3.8% of the complainants responded that E-FIR is better as it does not involve any involvement of reference of third party. Another 3.8% of the respondents responded that CCP has ensured transparency by digitizing the system.

Table 4: Citizen Complaint Portal vs. Conventional system Response Percent

Source: Author's own illustration based on primary data analysis

### **Citizens Complaint Portal and public satisfaction**

Around 60% of the respondents believe that the time gap between lodging a complaint via Citizen Compliant Portal and action taken by police department has been substantially reduced. 25% of the respondents responded that their complaint was addressed within no time. 11.5% of the citizens responded that their complaint was addressed within an hour whereas, around 6% of the citizens claimed to have their complaints addressed within a day.

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Figure 6: Time gap between complaint lodging and action taken

Source: Author's own calculations based on surveyed data

Reduction in time gap between complaint lodging and action taken was found to be one of the major determinants of public satisfaction as 94% of the citizens have expressed that their complaints have been addressed in a way more efficient than conventional methods of complaint addressal. This confirms not only the improvement in police efficiency but also in public satisfaction.

### **Problems faced by citizens before CCP**

As far as the problems that citizens were facing prior to the advent of Citizen

Complaint Portal are concerned, 61.5% of the citizens expressed the apprehension that the department had non-responsive behavior previously. However, they claimed to have observed it changing gradually after the introduction of online portal. 11.1% of the citizens expressed that prior to the online system, they used to suffer from unconditional delays due to the lethargic behavior of Mohararr. The surveyed citizens also admired the cooperation level of front desk officers. Around 6% of the citizens responded that previous system involved greater opportunity cost of time.

Figure 7: Problems faced before Citizens Complaint Portal

Source: Author's own illustration based on primary data analysis

## **CCP from Police Officers' Perspective**

### **CCP's performance and user satisfaction**

The surveyed police officers were asked to evaluate the impact of digitization of complaints on police efficiency. 74% of the police officers when asked to evaluate the performance of the department expressed that it has improved the responsiveness of the department. 10% of the officers responded that the portal has helped the department to maintain permanent record which is directly monitored directly by senior officers. Moreover, no one fears the chronic misplacement of data now. Another 10% of the officers responded that it is convenient to read and access the complaint through e-tags. 4% of the officers responded that the system has paved path for quick disposal of complaints.

Table 5: Impact of digitization on police efficiency (Police Feedback) Response Percent

Source: Author's own illustration based on primary data analysis

### **Recommendations for Improvement (Police Feedback):**

The interviewed police officers offered several recommendations for improved functioning of e-policing initiatives. 30% of the challenges ridden officers recommended that grace period should be given observing the progress of IO & there should not be any rapid action against IO. 20% of the respondents responded that high speed internet should be provided as slow internet has tendency to completely paralyze police efficiency. Moreover, the officers also stressed that front desk should be integrated with NADRA system to make the functioning of the system more efficient and reliable. 22% of the respondents recommended that feedback should be gotten from neutral observers instead of parties involved in a criminal or civil activity

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otherwise it would result in negative feedback. 12% of the officers recommended that due to work load, sometime it gets difficult to address complaints in stipulated time therefore, complaint addressal hours should be relaxed. 4% of the officers recommended that more initiatives with modern tools should be introduced to enhance the performance of the department such as training of IOs into modern POLCOM system.

Figure 8: Recommendations for improvements (Police feedback)

Source: Author's own illustration based on primary data analysis

### **Conclusions**

E-Governance not only improves the efficacy by reducing the overhead costs but also by minimizing the expected time required for proceedings. The success of e-government depends much on how an economy works and how the information related to the changes within the government body flow to the citizens. E-government is more about transforming government so that it can become more citizen-centric. Information technology is playing a very important role in the life of people all over the world and is changing the life of people and changing the rules of business. E-government has been one such area whereby government is using ICT to provide speedy and efficient services to the public.

The journey of e-policing is not without obstacles. Our research also explored the barriers in the way of this e-transformation. The infrastructural barriers include slow speed and frequent interruptions in the Internet services as well as low quality of hardware being used in for cost saving. Low level of data security is another point of concern for individuals as well as organizations. People can be traced through mobile trackers, their cars and even data from their personal computers can be accessed. Moreover, a great deal of corporate companies sell data and personal information of the citizens to various advertising agencies which leads to low level of public trust on IT based applications. Lack of skilled IT workers also impedes the progress of e-transformation of police. Moreover, cultural resistance, extra-work load and stress of meeting deadlines have also been observed to be operational challenges hampering e-policing. However, it is observed that despite all these challenges Punjab Police is adapting well to the new technologies primarily due to effective policy making, determination and consistent efforts of the provincial government and Punjab Police leadership to implement e-policing.

The introduction of ICT in police framework, especially in the Punjab province, has

immensely affected the police culture of work, effectiveness and efficiency of the department by making citizens able to lodge complaints through email and mobile phones which are directly addressed by relevant authorities. It has not only made lodging of complaint and FIR easier but has also minimized the opportunity cost of time and money associated with it. Punjab Police has opted for a change of work culture by introducing online portals and smart applications in police work saving time and effort, improving response time, enhancing intelligence and analytical capacity of police. The implementation and adoption of innovative technology is assisting to fight against criminal violence, terrorism and has made the process of filing complaints quicker

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and easier. In Gujranwala, not only has it exerted a significant impact on the efficiency of police department but has also causes decline in the crime rate which in turn has increased market level confidence in the district police thereby contributing to making Gujranwala a prominent industrial hub and economically stable district.

### **Policy Recommendations**

The findings and discussion lead this research to recommend the following for the better functioning of the department:

a) E-Policing has brought with it several challenges which can alter the course of the intended change beyond the anticipated or expected outcomes. Thus it is important to introduce a system of periodic review to generate monthly, quarterly, six monthly and yearly reports for the IGP. The police department and IT policy makers should collaborate for better outcomes. Teams of qualified technocrats and police officers should revisit the e-initiatives and suggest practical solutions to the problems observed in the field in order to steer the process of transformation to e-policing.

b) Quality Assurance and Accreditation should be a key area of focus to ensure certified and qualified goods, services, infrastructure and human resource to efficiently manage and evolve the system of e-governance in police. Currently this aspect is not a top priority agenda item on the police list. However, in order to standardize the practices and application of e-policing across the province and to ensure continuity and credibility of e-services targeted towards better service delivery, the government should constitute an accreditation body to certify the standards of E-Governance systems and services. Quality Assurance Unit should be constituted in Central Police Office to monitor the quality of E-Policing processes

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and to steer them towards accreditation.

c) Time economy in addressal of complaints should not be attained at the cost of justice. Therefore, sufficient time should be allowed to the IOs to conduct in depth investigations of cases. Therefore, the disposal deadlines should be flexible and the IOs should be able to find sufficient time with the prior approval of the head of district police. IGP office should notify such changes in the time line SOP to allow flexibility and discretion depending upon the nature and gravity of the case. A grace period should be given observing the progress of Investigation Officers before departmentally proceeding against them for delay in complaint disposal.

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d) Training of police in ICT tools must be given top priority. Large scale training programmes should be introduced in all police schools, police colleges and National Police Academy to equip police officials of all ranks with latest ICT tools and e-policing applications. Proficiency in ICT and e-policing applications should be given more weightage in the appointment and promotions of police officers.

e) The effectiveness and efficiency of police can also be enhanced by improving police-public relation. Broadcasting police activities in the community and reporting district and provincial level news on local television channels can bridge the communication gap between police and public and can raise the level of public awareness regarding e-policing.