A REVIEW OF LITERATURE ON EFFECT OF ADOPTION OF TECHNOLOGY FOR HUMAN RESOURCE MANAGEMENT IN POLICE DEPARTMENT

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Abstract

Information Technology has changed lives in the 21th century across the globe and resulted in efficient, organized and systematic ways of working and managing organizations across sectors. The application of IT in Human Resource Management can enhance the productivity and efficiency of any organization. It can enable ethical recruitment, smarter administration, mass-scale training of employees, effective learning, rationalized performance management and systematic records management. With rapid and diverse developments over the past few decades, information technologies are being taken up by Police departments across the globe, for improving management of their human resource. Many such agencies have reported positive outcomes while some have faced challenges in adopting new technologies. This paper is a review of the literature available on the various ways in which information technologies are being adopted by Police departments for human resource management and their impact on such agencies. The paper also aims to identify research gaps at the intersection of the three distinct fields of law enforcement, information technology and human resource management.

Purpose- *To review the literature available on the ways in which information technologies are being adopted by Police departments for human resource management and their impact on such agencies. The paper also aims to identify research gaps at the intersection of the three distinct fields of Police department, information technology and human resource management.*

Research Methodology- *A systematic literature review of international and national research papers of published peer- reviewed journals based on the principles of secondary research. Research articles available on Google Scholar, Emerald Insights, Elsevier, Taylor & Francis, JSTOR, etc. were comprehensively searched and reviewed.*

Research Gaps/Limitations- *In this review, the research work identified is mainly peer-reviewed research available on Google Scholar, Emerald Insights, Elsevier, Taylor & Francis and JSTOR. Most of the studies identified were published in English. The literature available at the intersection of Police department, information technology and human resource management is limited.*

Originality/Value- *This review is an important contribution to the literature of IT adoption for human resource management as it provides insights on this topic in the context of law enforcement agencies and also highlights the areas of research which have not been explored. This paper is unique as it has covered adoption of IT from majority of aspects of Human Resource Management in Law enforcement agencies*

Findings- *The review suggests that adoption of information technologies has improved human resource management functions like recruitment, training, records management, communications, performance appraisal, etc. in Police department. It has also increased the efficiency of the employees and more importantly created transparency within the organization. It can be concluded that IT plays a key role in promoting work ethics and fairness in human resource practices. However, the judicious use of Artificial Intelligence must be ensured to preserve the human aspect in human resource management in law enforcement agencies. It can be said that Police department is yet to tap the full potential of Information Technology for Human Resource Management.*

Practical Implications- *Information Technology can make human resource management in law enforcement agencies effective and efficient. The researcher expects that this literature review would motivate further research in this domain and consequently increase the adoption of information technologies for human resource management in law enforcement agencies.*

Keywords- *Police, Human Resource Management, Information Technology*

INTRODUCTION

Information Technology (IT) has revolutionized the lives of people and organizations over the past few decades, directly and indirectly. IT has reshaped and redefined organizational values, policies and practices. It is difficult to imagine running organizations without IT in the 21st century. The world today is connected

digitally. Almost all organizations across the globe are adopting information technology in a variety of ways to run their basic as well as specific operations across core business functions like communication, marketing, finance, research and human resource management. IT has played an important role in helping large- and small-scale organizations reduce their operational costs, simplify their processes and save crucial time, consequently increasing their overall efficiency and productivity. Adoption of IT can be observed in organizations in the developed, developing as well as the under-developed countries. Interestingly, IT is not restricted only to corporate and industrial sectors, it has now become a strong pillar in Government organizations as well. Use of IT in Government organizations has resulted in increased efficiency and favorable outcomes in the field of Public Administration and Public Welfare. When it comes to public administration, the role of information technology in police and law enforcement agencies in crime detection and investigation has brought a major positive change as it has assisted in solving crimes with more accuracy by consuming less time and efforts. COMPSTAT is one such example, it uses crime statistics to improve the awareness and command of police superintendents over the on-ground crime situation. IT has transformed the day-to-day functioning of such organizations. However, information technology has not been utilized extensively for Human Resource Management (HRM). Most of these organizations still follow traditional pen and paper way for their human resource functions and practices. It can be said that Police and Law Enforcement agencies are yet to tap the full potential of IT for HRM. The literature available at the intersection of law enforcement, information technology and human resource management is also very limited. The application of IT in Human Resource can enable ethical recruitment, smarter administration, mass-scale training of employees, effective learning, rationalized performance management and systematic records management. HRM in practice evolving and undergoing reforms with the emergence of new technologies. Many law enforcement agencies have reported positive outcomes while some have faced challenges in adopting new technologies for human resource management.

Vashishth, 2012 in his study expressed that in the field of HRM, technology has made a paradigm shift towards cost reduction and efficiency along with a lot of opportunities and challenges. It helps in reducing the costs associated with the delivery of various services to the employees like recruitment, training & development, manpower planning etc. It provides information readily to managers which helps them in making strategic decisions. It creates opportunities for implementing IT with HR function: 1. Competitive Advantage, 2. Accessibility, 3. Rapid and Error Free Transactions, 4. Interactive Atmosphere, 5. Strategic Decision Making. Strom, 2017 in his study has the opinion that technology is having a positive impact on U.S. law enforcement agencies in terms of increasing efficiency, providing communication, enhancing information-sharing practices, and improving informational and analytical capacities. The adoption and impact of technology within an agency are often conditional upon three general types of factors: community, agency, and technology. Community factors may include local community priorities, state laws, or national sentiment (e.g., the push for BWC use after a high-profile incident). At the agency level, organizational climate will influence how technology is approached and integrated into the department. Finally, the factors intrinsic to the technology itself will influence success and adoption. For example, a certain technology may be more successful when it more closely parallels successful technology in the market (e.g., predictive analytics software can be seen as a natural extension of GIS use).

RESEARCH OBJECTIVES

- To explore the impact of the information technology adoption by the Police department under various Human Resource functions
- To explore the future implications on how advanced information technology can transform Human Resource management in Police department

LITERATURE REVIEW

The literature available on the topic ranges from adoption of technology by law enforcement agencies to use of technology for recruitment, training, communication etc. Hence, the review has been divided into sub sections for each theme.

Adoption of Technology in General

Introducing technology into organizational processes is a reform in itself and requires change management among the end users of the technology. Colvin & Goh, 2005 identified a four-factor model to explain why patrol officers embraced or rejected new computer technology. They have suggested that factors of information quality and timeliness were the most important. Lindsay et al., 2011 investigated qualitatively the factors which influence the use of mobile technologies by police officers. They identified four factors namely cognitive acceptance, management style, officer performance and security/reliability. Their study also shows that the three versions of the Technology Acceptance Model (TAM) do not confirm the broader organizational factors. Lindsay et al., 2014 validated a mobile technology acceptance model (M-TAM) developed in a single police force of the UK Police force. They have shown that local supervision and fit of technology to different roles play

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an important role in acceptance. Mohd, 2016 investigated the user satisfaction towards Human Resource Management Information System (HRMIS) application amongst government servants at Terengganu Police Contingent Headquarters, Malaysia. He found that the satisfaction of user is positively related with the user's characteristic and organizational support. Heather R. Cotter, 2016, is of the opinion that Law enforcement agencies are making significant progress accepting the rapid advancements of technology. Today, most agencies agree that sharing law enforcement data locally, regionally, state-wide and nationally is important to combat crime. This wasn't the case 20 years ago when every agency held data closely. Law enforcement agencies are recognizing and accepting that they do not have the financial, personnel or infrastructure to keep up with technology updates and comply with legal, Criminal Justice Information Services (CJIS) and cybersecurity requirements. As a result, agencies are increasingly looking to outsource several of these requirements. Zahari et al., 2017 had measured the acceptance of Human Resource Management Information System (HRMIS) by the employees of the same organization and observed a significant positive correlation between HRMIS application and the satisfaction of the employees using it. Katarinaa, 2020 conducted an empirical study of the use of Systems Application & Products (SAP) software application by the Serbian Ministry of Interior, which is responsible for local and national Police services in Serbia, for human resource management (personnel records, training management, time management, organizational design and recruitment). They found that adoption of the software had contributed to better decision-making for reassignment and transfer of employees. The software provided them report on each employee, the number of employees in certain ranks, the number of managers by level of management and helped in predicting career development of employees, their movement and planning their training. The software thus facilitated more rational planning and utilization of available funds. Abbas & Policek, 2021 conducted a pilot study in a UK constabulary of medium size, through a multi-method approach to understand the resistance of police towards mobile technology. They found that the officers in general felt that Google Maps enhanced their efficiency and younger officers are more receptive to technology. They also found that signal/connectivity issues reduced the anticipated benefits of the technological devices.A study was conducted by Koper, Taylor & Kubu, 2009 where in a workshop participants in the Police Executive Research Forum (PERF)-Lockheed felt that the workshop was very valuable and that having more such forums would benefit the policing profession in ways such as: (1) identifying future partnership opportunities to advance capabilities for law enforcement; (2) recognizing that solutions exist in non-traditional venues; (3) developing standards for police technology; (4) disseminating best practices in technology implementation and use; and (5) helping agencies find funding and assistance for technology acquisition.

Recruiting

Recruitment or Hiring is a key function of Human Resource. All organizations focus on recruiting the most suitable talents according to their needs and future goals. The process of recruitment itself is not just hectic and time consuming but requires ethical considerations. Technology can design an impartial and fair recruitment process which can benefit the organization in recruiting the best talents. Kumar, 2012, highlighted the importance of IT in the recruitment process of the police, use of Information & Communication Technology (ICT) starts from the advertisement, forms filling, written test information, date of interview of the eligible candidates and finally selected candidates etc. Koper, Taylor & Kubu, 2009 stated that hiring and retention of officers has been a major concern for policing agencies during the last few decades. Technology can be used to market law enforcement (for example, sleek websites) but also can serve as a magnet for younger recruits interested in working with the latest technology. Agencies must attract and retain personnel with skills in the selection, implementation, and use of technology. With the advent of Artificial Intelligence (AI), many organizations have identified AI as an effective tool for recruitment as it helps in selecting the best profiles according to the needs of the organization. Martinez & Fernandez, 2020 emphasized that Artificial Intelligence is a turning point in the previous way of recruiting, especially when combined with cognitive psychology. It saves candidate's time and reduces the geographic distance and time of face-to-face interviews. Ong, 2019, on the other hand is of the opinion that if artificial intelligence hiring systems streamline the hiring process more efficiently than the traditional methods, then the administrative burden may decline in the future. In this regard, it is highly important that AI systems use the correct algorithm and designs in order to achieve desired results. It might be possible that some of the systems might lack these functionalities. In such cases, the desired outcomes will not be achieved by the organizations. Artificial intelligence hiring systems lack design features to draw the causal relationship between candidate characteristics and hiring decisions, which means machines cannot sufficiently explain why it thinks certain candidates would be more qualified than others. Implementing fairness and safety measures could reduce the affordability of artificial intelligence hiring tools in the long-run because merchants will internalize the marginal cost of developing a safer product and pass the added expense down to consumers. If artificial intelligence hiring systems streamline the hiring process more efficiently than traditional methods, then the administrative burden may decline in the future. The five pillars directly address the pressing concerns expressed by members of the public by demonstrating our commitment to diversity and liberties of the people. 1) equal employment opportunity, 2) individuals living with disabilities, 3) human autonomy, 4) individual liberties and safety, 5) product integrity. One drawback of AI in recruitment process is

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less involvement of Human Intelligence. Martinez & Fernandez, 2020 expressed the concern that technology in the HR has evolved enormously but often has lost the human aspect. Pandey & Khaskel, 2019 however expressed a different view that it is to be noted that AI is gaining popularity in the HR industry. The current youth workforce believes in disruption of HR due to AI is certain areas of HR processes as discussed above, AI has taken over the talent acquisition and employee engagement space by its usage in various applications being launched, however human intervention is required for the optimal usage and functioning of the highly revolutionized AI systems. RAND Corporation, 2020 mentioned that Research on recruitment and retention is evolving and still has some significant gaps. Local agencies will need to identify what has been learned elsewhere with regard to their specific problems. Helldorfer, 2016, analyzed in a study that out of the law enforcement agencies that recruited applicants through social media, 78.8% were recruiting monthly or less (on average), as indicated in. In addition, 32.4% of those police departments were recruiting monthly; 31.8% were recruiting less frequently. Liu et al., 2017 suggested that to improve staffing efficiency and service quality, a double-resource queueing model (DRQM) with referral and a single-resource queueing model (SRQM) with inner classification should be implemented.

Talent Management (TM)

Talent Management is an essential Human Resource function in any organization. The impact of Human Resource Management on Talent Management is very important, as it defines how an organization works to retain its talent and improve working conditions within the organization. Saddozai et al., 2017 is of the opinion that successful implementation of TM polices by an institution will create an active and healthy working environment. Serious reforms in Human Resource, Talent Management polices and career development programs are needed to improve the working environment and to promote healthy practices. Personified Talent Management schemes and policies are more effective in retaining future talents, which, in turn, will promote institutional development.

Performance Appraisal & Management

Another important function in Human Resource is Performance Appraisal and Performance Management of the employees. It is of utmost importance that employees work efficiently and accomplish organizational goals. Performance Management can help in identifying various factors or gaps which are obstacles in achieving organizational goals and high levels of productivity. Jackson et al., 2014 in their study found that in considering potential productivity improvement from IT use, analysts need ways to measure relative levels of effort devoted to different police functions. In addition to asking what IT investments and procedures changes were made, it is also necessary to ask when the investments were made. Because of the learning requirements and other effects seen in other sectors' use of IT, timelines matter. A study conducted by Thielen et al., 2018 found that performance evaluation should be preceded and combined by performance planning to engender employee well-being. The relationship between employee performance management and well-being is explained by the satisfaction with the system. Similarly, Chan, 2001 found that majority of the respondents in a study stated that the use of information technology has allowed them to work more effectively (79%). Same conclusion can be drawn from another study by Koper, Taylor & Kubu, 2009 which concludes that information technology can also increase the efficiency of police in ways that ultimately improve their service and performance. However, it is not necessary that Information technology implementation can result in performance improvement within the organization. There are instances where the application of information technology systems has complicated the functioning of the organization and reduced the productivity of the employees. Findings of a study by Koper, Lum & Willis, 2014 suggests that the effects of technology are complex and that technological advancements do not always produce obvious or easy improvements in productivity, communication, cooperation, management, or job satisfaction. Further, police often fail to make strategically optimal uses of technology for reducing crime and serving citizens. Similarly, it was found in a study by Vuorensyrjä, 2018 that the rate of growth of labor productivity was unaffected by the management reform period. In fact, productivity may have declined during the reform process. Citizens' evaluations of police services have slightly deteriorated over the management reform period. Garicano & Heaton, 2010 expressed in their study that when considered alone, increases in IT are not associated with productivity measures, and computing technology that increases reported crime actually generates the appearance of lower productivity. These results persist across various samples, specifications, and IT measures. IT investments are, however, linked to improved productivity when they are complemented with particular organizational and management practices, such as those associated with the Computer Statistics (COMPSTAT) program. Similarly, Kai-ting, 2012 reported a study which examined the effect of the new Performance Management System (PMS) on the officers of Hong Kong Police Force. Kai-ting mentions that the new system- VDCBPMS was better than the conventional systems due to its compatibility with computers. Yuan et al., 2015 proposed a smart work performance measurement system which includes a smartphone application for collecting attendance, work, and location information. It also includes a center to analyze the data collected by the app to systematically evaluate performance.

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Performance & Efficiency of Police Organizations

Many authors have also examined the impact of use of technology on the performance and efficiency of police organizations. Methods like the Data Envelopment Analysis (DEA) have been explored by many authors. Verma & Gavirneni, 2006 have tried to develop a method for measuring efficiency of police by using Data Envelopment Analysis (DEA) on data related to police-work of India. Asmild et al., 2012 have proposed a method to reallocate human resources across tasks within a specific unit as well as between similar units in Police organizations using a data envelopment analysis (DEA) model set. According to the authors, this method improves operating efficiency and saves resources and also allows the management to compare the results obtained for different combinations of re-allocation of personnel between units and functions. Gorman & Ruggiero, 2008 have used multi-stage Data Envelopment Analysis (DEA) model to evaluate the efficiency of state police services in the United States of America. Wu et al., 2010 have measured the performance of Police forces in Taiwan using Data Envelopment Analysis (DEA).Sparrow, 2015 recommends a broader framework to measure and report police performance related to the mission of a police agency, the dimensions of police performance and better understanding of metrics that capture the various features of police work. The paper also examines integrity issues related to COMPSTAT and crime reporting by the New York City Police Department and implications of such issues for systems similar to COMPSTAT.

Communication

Communication through Information Technology produces better outcomes as compared to traditional ways of communication. In the era of Internet and social media where communications can be sent and received instantly, IT systems have become highly advanced and messages can directly reach the target audience in real time. Ensuring clear and effective communication is a key responsibility of human resource department of any organization as it is crucial for various functions like Recruitment, Orientation, Training, Procurement etc. Also, communication plays a crucial role in law enforcement agencies in order to engage with multiple stakeholders. Sometimes the content of the communication can be sensitive and can be general otherwise. Information technology can fulfill the requirement of clear, direct, safe and fast communication for law enforcement agencies through various communication tools.

Chan, 2001, validated in a study that use of information technology has a positive effective in the context of communications. Koper, Taylor & Kubu, 2009, expressed in their study that communications technology is a high priority for many agencies. Improving the inter-agency interoperability of communications is an important concern. Other issues in communications include improving the ability of police to transmit and receive information from the public and the development of locator technologies. Strom, 2017 has validated in his study that today's state and local law enforcement agencies are heavily involved in technology. 96% had implemented one or more of the 18 core technologies of interest, most commonly information-sharing platforms (68%), and social media (68%).Sethi, 2013 suggested in his study that to meet the challenges of the coming decades it is essential to have a police force which is up-to-date with Information & Communication Technology in its daily work. This will build the confidence of the public that the police force is effective and can serve the community efficiently. It will help bring more offences to justice through a modern and efficient process. Employees will also get benefit. Not only does technology promise to improve police effectiveness and efficiency in controlling crime, it may also enhance their professional status and organizational legitimacy. Ma, 2013 had made an attempt to empirically examine the adoption of microblogging by Chinese Municipal Police departments, from the perspective of intraorganizational communications and organizational innovation diffusion. It was found that government size, internet penetration rate and intergovernmental diffusion effects are the key factors behind the adoption of microblogging by the police departments.

Training Employees and Developing Managers

Training of employees is a recurring need of any organization. All human resources need to be trained at regular intervals to upgrade their skills and achieve organizational goals. No organization can survive without an adequate and functional training system. If the training needs and planning can be mapped through the use of information technology, much better outcomes would be obtained. Also, competencies of the employees can be assessed through IT tools first and then based on the results, further skilling, reskilling and even inter-departmental shifting of the officials can be done according to their skills and knowledge. This would benefit the organization and also motivate the employees towards their job and responsibilities. The results of studies have shown that the subjective norms, perceived ease of use, and perceived usefulness positively influenced the usage intention of e-learning for police education and training. The earliest paper, Bernstein et al., 1982 compared Truncated Component Regression (TCR) and Ordinary Least Squares Regression (OLSR) of Minnesota Multiphasic Personality Inventory (MMPI) and field performance indices of police officers obtained during their training as well as their early years of service. Their findings support the use of MMPI in police selection. More than two decades later, Laat, 2006 mentions that to promote networked expertise for better knowledge management and learning, the Police Education and Knowledge Centre of the Dutch Police created a nationwide intranet comprising of the Police Knowledge Net (PKN), Police Discussion Net (PDN) and E-Campus. Yalcinkaya, 2007, has proved in his study that perceived ease of use has a positive effect on attitude of

police officers using the Police Communications Network (POLNET) system. Personal Innovativeness has a positive effect on Behavioral Control of police officers using the POLNET system. In the same year, an investigation by Zengin, 2007 was published on the perceptions and beliefs of the trainers and trainees of the Turkish National Police towards adoption of e-learning technology for in-service police training. Findings include a positive perception towards e-learning and belief in the importance of appropriate resources and administrative support for integration and implementation of e-learning. Leal, 2009 has discussed the positive and negative impact of e-learning on law enforcement agencies including the benefits of cost and flexibility and the loss of interaction and learning together with peers. BinSubaih et al., 2009 have mentioned how instructional design can be applied for development of a serious game for traffic accident investigators in the Dubai police force. They found that the students and educators were positive about the game, while the policymakers found the game to be innovative. Koper et al., 2009 stated in their study that technology has the potential to enhance and economize various forms of police training, such as simulation training in the use of force. At the same time, agencies must ensure that personnel are properly trained in the use of technology. Davies et al., 2010 evaluated an online module in police investigation studies used by Charles Sturt University School of Policing for NSW Police recruit students. They found that students preferred it over traditional print-based curriculum delivery due to the real-time policing scenarios provided by the online module. It was also preferred because it accommodated diverse learner styles and individual rates of progress. Caro, 2011 had used regression analysis to examine influence of the state police law enforcement academy on the performance of commissioned officers in the field training officer (FTO) program in a state of the United States of America. Graham & ZengiN, 2011 mentioned four benefits of e-learning viz. flexibility of time and location, consistency of quality, quick dissemination of critical knowledge along with enhanced communication and collaboration. They also mentioned that the US FBI has created the Law Enforcement On-line (LEO) system and provide e-learning environments for FBI members and officers from other police agencies through the FBI Training Network (FBITN).

Hollywood et al., 2015, suggested a training repository of best practices with supporting evidence and tools. In the same year Sumuer & Yildirim, 2015 published a mixed methods research study to examine the acceptance of an electronic performance support system (EPSS) designed for the Crime Scene Investigation and Identification Units of the Turkish National Police. They found that the acceptance was determined by perceived usefulness, perceived ease of use, and attitude towards using the EPSS. Lyons et al., 2016 evaluated the U.S. Coast Guard's Electronic Performance Support System for the Fast Response Cutter. Their analysis concluded that the EPSS could support the performance of the FRC crews and their land-based support units adequately in locating information and completing tasks regardless of prior knowledge or training. Ferenčíková, 2017 mentions the use of e-learning modules for the traffic police of Slovakia and the Czech Republic, for learning foreign language like English. Widada et al., 2018 have analyzed the implementation of Police Academy Information System at the Police Academy Semarang in Indonesia through qualitative descriptive approach. They found that although using the system has its benefits, the faculty and the staff are unable to operate the system for using it effectively. Rui-Hsin & Lin, 2018 found in their study that subjective norms, job relevance, system quality, service quality, and ease of use were found to act positively on the police's perceived usefulness of e-learning. Lastly, system quality and service quality acted positively on the police's perceived usefulness of e-learning. Antoniv et al., 2019 have investigated the integration of digital storytelling approach in e-learning for police students at a Police High School in Norway and found that the integration helped the students in understanding the case-task content better. It also increased their motivation in the learning process. Chekovikj & Kalach, 2019 analyzed the problems of existing learning environments in the Border Police of the Republic of North Macedonia and highlighted the need for e-learning and smart learning environment in the remote border areas. Honess, 2020, in his study analyzed from the 809 completed surveys, has determined the ubiquity of the NCALT e-learning system for ongoing training with nearly all (98.4%) respondents stating that they had undertaken an e-learning course in past 3 years. Just over half (53.9%) of respondents took the second most used method, classroom-based practical exercises, and only 36.7% had undertaken training in a large lecture group. Significantly, less than half of officers believe that they are able to implement their training in their day-to-day job that calls into question the validity of the training and the time it takes to conduct. Davey et al., 2021 had evaluated e-learning modules developed and delivered to staff of New Zealand police to counter any discrimination while handling mental health related calls. They found that e-learning could be used for enhancing intrapersonal attitudes and behaviors among the police staff for handling such calls and can also encourage improvement in the well-being of the police staff themselves. Information Technology can also be used to analyze organizational behavior, for example, Kao, 2015 examined the organization behavior of police organization in Taiwan using Hierarchical Linear Modeling (HLM) on **data collected from survey on 34 international harbour police stations.** Using this method, he found that transformational leadership and organizational commitment positively influence the organizational citizenship behavior of the police.

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Deployment

It is important to deploy officers appropriately, based on their rank, experience and skills. McCue & Parker, 2003, suggested in their study that the massive volume of data law enforcement organizations work with on a daily basis requires a different approach to analysis. The Richmond Police Department has found data mining and predictive analytics to be the most effective approach to addressing the so-called volume challenge associated with this massive influx of information, and is pioneering the use of these tools in policing. These tools now give us the opportunity to analyze police calls for service data at a level previously unavailable to the law enforcement community and develop accurate and reliable models that significantly enhance patrol deployment decisions. In an article published in NY: Criminal Justice Press, 2007, it was highlighted that IT-facilitated decision making pertains to resource deployment and the investigation and apprehension of offenders. IT capabilities are central to a policing innovation developed by the New York City Police Department. COMPSTAT is a system for collecting and disseminating information on crime problems and the tracking of efforts to address them. IT systems are also being used to identify officers who show early warning signs for the development of misconduct patterns. Koper, Taylor & Kubu, 2009 suggested in their study that police is increasingly recognizing that their deployment and strategies should be guided by information and analysis that helps them focus on the places, persons, times, problems, and situations that contribute most to crime. Information Technology can facilitate this orientation by improving the integration, analysis, and dissemination of information both within and across agencies.

Records Management

Records Management is a key human resource function in any organization. However, it becomes extremely significant in police department as the volume of records is too large and managing the records is a very hectic task in Police department. Information technology plays a crucial role in Records Management in police and law enforcement agencies. Effective Information technology with better data systems can store large volumes of data and can be accessed by Police officials at any point of time. Tye, 1993 explained in detail in his study where the opinion that law enforcement's initial attempts at managing information have, all too often, focused on solving singular organizational problems while relying on technology driven solutions, i.e., dispatching, indexing of report information, crime analysis, narcotics, information systems, etc. Simply stated, future practitioners of information management will do well to appreciate and understand the fundamental components of "records" management as defined by early law enforcement scholars. Although past automated efforts have contributed widely to improved efficiency in dispatch and clerical operations, the value to "information" as an organizational resource is questionable. Indicative of this observation is the fact that most first generation, and many existing "CAD" (computer aided dispatch) systems provide little capability for information reporting and/or analysis. Critically speaking, it could be asserted that law enforcement's managing of information through technology has contributed to de-emphasizing the important role of "records" as an organizational entity responsible for managing information. To stay in step with the times, "records" as an organizational structure could be more accurately referred to as "information systems" but maintain, or better yet, retain the overall responsibility of coordinating the entire work flow effort. The work flow of information would and should include; dispatch operations (communications), officer field reporting, data collection/entry, statistical analysis, report distribution report query/analysis, document storage/archival, etc. Chan et al., 2001 mentioned in their study that police are now being required to record more information for accountability purposes and officers feel that they are under more scrutiny. On the other hand, managers are making only limited use of information technology systems for monitoring purposes, the systems themselves have a number of shortcomings and, in some areas, risks may have actually increased as a result of the greater ease of access that officers have to confidential information. Consequently, the extent to which there has been a net increase in accountability as a result of the increasing use of information technology is very difficult to determine at this stage. Borglund, 2005, highlighted that operational work in police agencies has changed in a positive direction by the use of electronic records and it is possible to change even further. Records management system designed to support access independent of location of the police officer, could open up new possibilities for working police officers. Koper, Taylor & Kubu, 2009 in their study suggested that better data systems and access would seem to hold much potential for enhancing the effectiveness of police, particularly when coupled with crime analysis capabilities that can be used to improve strategy, resource allocation, and managerial control and accountability. Hollywood et al., 2015 suggested in their study that there is always need for improvement of data systems for better storage of data. Need to further develop RMS/CAD data interoperability standards and testing, certification, and enforcement mechanisms for compliance. Standards should explicitly include metadata and image-sharing and should further existing standards rather than disregard them. Strom, 2017, expressed his opinion in his study on the impact of technology on policing activities that records management systems (RMS) and computer-aided dispatch (CAD) were the technology credited with having the greatest impact on police agencies nationwide. Willis, Koper & Lum, 2018 found in their study that the knowledge and assumptions of designers embedded in a standardized RMS clashed with users' beliefs in the necessity of an RMS that could be customized to their specific needs. The major finding in a study was that even though Avalon adopted a textbook management approach to organizational change,

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difficulties arose because of patrol officers' practical experiences with the RMS as cumbersome and inflexible in the context of their daily work, and as delivering unclear crime control benefits. Despite Avalon's attempts, the RMS met with considerable resistance from the rank and file, and even outright hostility.

Employee Health and Safety

One of the major functions of Human resource management is to ensure the health care needs and safety of the officials are taken care off. In this case, IT can assist in designing Health and Wellness programs so that health and safety of the employees can be ensured. Hollywood et al., 2015 in their study suggested that in order to improve the health of law enforcement personnel, proactive/preventive measures for incident/stress management must be developed, how a wellness program improves quality of operations must be quantified, make greater investment research and development in officer health, develop models, resources, and examples for health programs, employ a scheduling and staffing tool to improve quality of life and create an early-warning system for officer emotional state.

Administration and Operations

Role of Information Technology in day-to-day Human Resource functions like administration and operations in Police and law enforcement agencies are extremely significant. From Requests for Proposals to finalizing contracts of Vendors and payment of various bills to purchase of various equipment, machines and upgrading the office infrastructure etc. organization depend on IT systems. Newcombe, 1995, suggested in his study that enhanced 911 systems in conjunction with updated CAD technology have revolutionized law enforcement in many parts of the country. A study by Lallande, 1997, mentioned that Primary responsibility for technology management resides with the Operations Division of the Field Services Bureau, which includes dispatch, the Computer Aided Dispatch (CAD) system, and management information systems staff. Communications, telephone services, and data processing all reside in the Administrative Services Bureau. This structure caused a lack of focus in the selection of a CAD vendor. In a study it was found that police and support staff benefit from the acquisition of new-generation computer systems. Nesbary, 2001 analyzed in his study that all respondents felt that the new CAD system had some beneficial features. The police officers saw little direct improvement but did see some benefits. This indicates that the acquisition of a CAD system should be made deliberately and with examination of systems installed elsewhere in the country. Nunn, 2001, found in his study that highly computerized cities reported larger shares of employees in technical positions, spent more per capita, and reported fewer officers per capita than cities with lower computerization levels. In a study conducted by Sanders & Henderson, 2011 following recommendations were suggested: - (1) integrated policing and information sharing and (2) the social shaping of technology. Specifically, this study: (1) identifies a critical functional disconnect between the design and use of police technologies, (2) uncovers the impediment non-human actants play to technological functionality and collaborative policing and (3) identifies the impact organizational contexts have on both the function of police technologies and integrated policing. The study has illustrated how police technologies are subject to organizational contexts, which can change their intended use and function. It highlights how organizational structures have come to shape the use of IT, and subsequently, the development of hierarchical information sharing. Mollah, Islam & Islam, 2012 in their study suggested that as e-governance is a necessity for good and corruption free nation it is very important to provide e-government related service i.e., e-police to citizens for getting better and secure e-government services. It is recommended to developing countries that to take necessary steps for upgrading the present police system to e-police system by overcoming the issues and challenges. In future we can add and use new technologies, wireless communication systems, modern IP networks. Strom, 2017, in his study found links between policing strategies and technological adoption. The study highlighted little relationship between the policing strategies that agencies most closely adhere to and the number of technologies used. Policing activities and strategies and technology selection. Nationally, law enforcement agencies are generally not making technology decisions based on their dominant policing philosophies. An exception were agencies that emphasized community policing which were more likely to use social media.

Budgeting

Budgeting is a key aspect of any organization which impacts the overall functioning. Hence it becomes necessary to explore and understand the Budgetary implications of utilization of Information technology in Police and Law enforcement agencies. The budgetary implications of increasing the utilization of Information Technology and use of computerization are not clear. These data suggest that, although certain staffing economies are possibly linked to more IT in an agency, the wages for the remaining employees or the ancillary costs of computerization may be higher than those of comparable cities with less intensive IT usage. The budgeting function appeared to require, at a minimum, information contained in payroll and department inventory files, signifying the maintenance of records for labor and capital resources used to deliver public safety. Manpower allocation had the largest number of computerized files linked significantly to it. For instance, payroll files increased the odds of computerizing manpower functions the most, by a factor of more than three, Nunn, 2002.

Knowledge Management

IT is already playing a key role in Knowledge Management Systems for various organizations. The employees can access relevant information related to the organizations functions and operations through such systems. The results of a study conducted by Brown & Brudney, 2003 suggests that information and its associated technologies can have a powerful effect on decision making. Results suggest that if public agencies are to achieve the signaling benefits of IT, they will require better methods for identifying the information needs of end users. Gottschalk, 2006 expressed his views that information technology to support knowledge work of police investigators is improving. Law-enforcement agencies have captured data only on paper or have fed it into a database or crime information system. If the agency involved has more than one database (that are possibly incompatible), information retrieval can be difficult or time consuming. Database technology plays an important role in the management of information for a police department. The system enables real-time knowledge sharing and has become a catalyst for a quantum change in the organization's structure and the method by which it delivers its services. Lindsay et al., 2009 investigated the impact of mobile technology on the knowledge sharing processes of the UK police force, using a mixed method approach. They have found that mobile technology has a positive impact on knowledge sharing and policing. It improves the timely availability of information for decision making and also reduces information overload by providing greater control over information.

CONCLUSION

The objective of this study was to assess the impact of the Information Technology in Human Resource Management in Police department. Since IT has already been playing a key role in Crime detection and Crime solving, it is becoming essential to assess its impact in Human Resource management as well. The review suggests that the implementation of IT in HR management has overall improved the functioning of Police Departments in various aspects like Recruiting, Training & Orientations, Records Management, Communications, Performance appraisal, Deployment etc. This increased functioning has resulted in achieving the organizational goals as well as ease in day-to-day HR core functions. It has also increased the efficiency of the employees and more importantly created transparency within the organization. By creating transparency, Police and Law enforcement agencies ensure work ethics and morality in much better sense. Trusting the technology for Human Resource requirements seems safe and justified. This definitely removes the human bias in various HR practices and establishes a standard practice. It is also observed from the study that IT provides flexibility to the organizations to revise their systems according to current needs in terms of features to be added or removed. Such customization helps the organizations in their HR planning and management. IT systems should be designed according to the needs of the organizations and the employees should be trained accordingly to achieve smooth functioning and coordination. Very few studies indicated that IT systems have complicated the Human Resource functioning of the organization. However, it has to be noted that the judicious use of Artificial Intelligence must be implemented so that the human touch is not lost while implementing the Human Resource practises in Police department. Finally, the review clearly suggests that the use of IT for Human Resource management will definitely improve the functioning of the Police department as it provides various opportunities for the employees to skill and reskill themselves.

IMPLICATIONS

The findings from the review after analysis indicate various implications for the future on how IT can transform the Human Resource practice in Law enforcement agencies. Artificial Intelligence can certainly streamline the process of Recruitment, Staffing and planning for Training related requirements of the employees. IT tools can be improved further in terms of data security for Records Management purposes. Large volumes of personal data of the officials as well as case files can be stored safely so that records and important documents can be safely maintained over a period of time in a robust IT portal and thus reducing the dependence on paper. IT can contribute in creating more interactive, user friendly and easily accessible E-learning platforms on various topics related to Public Administration which are useful for Police and Law Enforcement officials. Through these platforms various aspects of training can be covered and it can be immensely beneficial for conducting training sessions for a larger audience at the same time. The IT system should be user-friendly for the Police officials to easily learn and operate on a daily basis. At the same time, the system should function seamlessly, so that work is not affected. A major factor to consider here is the adoption of the Information Technology for Human Resource functioning by the Law Enforcement agencies. The approach and understanding of the Law Enforcement agencies for the technology needs to be considered. The economic cost of procuring the technology for the Human Resource department in Law Enforcement agencies can be a factor which might influence the adoption of technology in the organizations. Also, agencies have to evaluate eligible vendors who can install and implement the IT systems as well as who can provide support and maintenance services. All these will have budgetary implications which needs to be taken care of by the organizations.

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LIMITATIONS

Studies where the role of Information technology is explored in HR practices are majorly focused on few HR functions like Recruiting, Training, Records management, Performance appraisal and Performance management etc. and other HR functions are less explored. Also, it should be noted that very few studies mentioned in this article have been conducted in India, especially in context to police and Law enforcement agencies. Technology adoption for human resource management by law enforcement agencies is a relatively less explored area of research.

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