



Issues in the Implementation of E-Governance in Khyber Pakhtunkhwa (KP)

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Abstract

The provincial government of Khyber Pakhtunkhwa has taken a number of steps in order to develop and establish the concept of E-governance in different departments of the province. There are, however, certain hurdles, such as missing the rudimentary ICT (information and communication technology) substructure and setups. To properly utilize the ICT for the sack of E-governance, it is important to know the use of the different types of technologies. Unfortunately, in Pakistan, IT literacy and knowledge are extremely poor, while financial constraints is another hurdle. However, the newly introduced reforms in E-governance have put various departments on the right track, as obvious from the Identity Verification system, the vehicle verification system and the online FIR system. This paper will help identify all the majors issues that affect the efficiency and credibility of E-governance.

Key Words: E-Governance, Information and Communication Technology (ICT), Literacy

Introduction

The word electronic government, commonly used as e-governance, is comparatively a very new idea and concept in Pakistan. In order to go parallel and have a competition with the entire world, the government of Pakistan took the initiative in the very recent years to transfer the traditional form of governance to the modern form, which is e-governance. (kandhro, 2011). The main purposes of this research are to find out the definition, the future and obstacles and challenges that will be faced by e-governance while in its establishment. The government of Pakistan give great importance to the development of information and technology as part of its effort to developed a sound and fruitful e-governance system in Pakistan (Mahmood, 2007). For the sack of good and vital E-governance, the electronic Government of Directorate was established in October 2002 by information ministry and merged it with the computer bureau of Pakistan to form a new organization with the name of national information technology board (Dawn, July 19, 2014).

To define the term E-Governance the first step is to define the governance. Governance is not a very simple word to define different people, and organization define governance in a different way. According to the world bank, the concept of governance can be defined as the following “The governance is the exercise and implementation of the different types of political power and authority and is also the use of the different institutional resources and possession in order to manage and control the different types of glitches and affairs in the society.” (The World Bank, 1991). Governance can also be defined as “The governance of the system and the manner and way of providing the authority and also the control” (Bannister & Connolly, 2012).

International Institute of Administrative Science gave a very brief and explanatory definition to the governance “the concept and term of the governance refer and denote to the process and procedures whereby different elements and fundamentals in the society wield and exert the power and the authority, and also to influence and enact the different policies and the different kind of decisions regarding the public life, and also the economic and the social development of the people and society. The concept of governance is comparatively a very broader and larger notion than that of the government, whose main and the basic principal elements and

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fundamental includes the constitution, the element of the legislature, the executive element and the element of the judiciary. The concept of governance involves and primarily responsible for the interaction and communication between the different formal and recognized institutions and also those of the civil society (Bannister & Connolly, 2012). above mention, definition is very much different. In order to explain and address this matter, Bovaird and Löffler explain that there are certain common elements that include acceptance, governance, and different form of government (Norris, P. 2001). once understanding the concept of governance, let combine governance with Electronic in order to make its meaning clear E-governance means the utilization of Internet and the World Wide Web (WWW) for transfer of information and delivery of services from government to citizens (Merchant *et al.*, 2007).

The concept and the system of the E-governance is relatively new in side the Pakistan and we can say that its only in the beginning process. It was the initiative of information technology ministry under the national IT Policy 2000 approved by the federal cabinet Rs 2.6 billion were approved for the allocation of e governance across the country (Ghayur, 2006). The main aim behind this allocation of money was to achieve certain objectives:

- i. The first objective was to improve and enhance the service delivery to the citizens.
- ii. The second objective is to improve and enhance the internal efficiency and competence of the government operations and work so that government work effectively for the betterment of the people (Ghayur, 2006).

To get and achieve these objectives and goals, this will not be that much easy for a developing country like Pakistan as it will face a lot of challenges and obstacles.

The most important and the prime problem and difficulty faced by Pakistan in the establishment and development of the e governance is the worst ICT infrastructure. The condition and state of the physical infrastructure of ICT in Pakistan are very much poor and deprived. Therefore the country like Pakistan are facing huge amount of issues and problem in the many sector of the ICT. There is a huge amount of resources shortage and deficiency such as there is lack and deficit of the electricity, there is the problem of finance, there is no proper and well-developed hardware and software system and technology. There is a huge amount of problems in almost all the sectors of technology that are essential for the development of the ICT and also the establishment of the E-Governance in the country (Haider *et al.*, 2016). The struggle and the getting of power are the main and the prime concerned and aim of the different political parties in Pakistan. And therefore, there is a constant amount of struggle between the different political parties, and sometimes when one party get into power, it does not like to sustain the policies of the previous government and wants to bring and establish new and unique policies this thing so many time in the past brings a huge amount of loss and misplay especially in the policies toward the ICT and the E-Governance. It will then result and outcome in unreliable and conflicting kind of policies for the new governments, and as a result, these policies are often proven and confirmed and considered to be short-term policies. Since the implementation and the execution of the new form of governance called the e-Government, this is the prime responsibility of the government to give a full response to the development of this E-Governance and therefore, the government of the Islamic Republic of Pakistan required and is responsible to provide the money and funds for the development of the E-Governance. (Kumar *et al.*, 2007)

The economy is also one of the most important hurdles and problem in the way of the development of the E-governance because we knew that in the emerging and developing country like Pakistan, there will always be a shortage of the economic resources to in order to carry out certain projects like the development of the E-Governance. (Babatunde & Adefabi, 2005).

Social problem is also an important hurdle in the way of the development and the establishment of the E-governance in Pakistan. A large proportion of population in Pakistan is not literate which put and implement a very bad effect on the establishment and the development of the concept of the E-governance in Pakistan. (Haider *et al.*, 2016).

The Internet is an important and essential environment for the development of the E-Governance, without the well-established and well accurate form of internet connection the dream of the development of well-developed and a systematic form of E-governance is not possible. Due to the low and weak internet connection in Pakistan, E-government and governance face certain problem for its development and establishment (Milliman, 2002).

The ongoing difficulties and the problems faced by of the individuals in the field of network and internet connection it effects and have a very bad impact on the establishment of the E-governance in the country and thus leave and deprived a very large portion and population of the world 'deprived from the access and the reach of the e-government and E-governance in Pakistan (Jaeger, 2004).

Issues in the Implementation of E-Governance in Khyber Pakhtunkhwa

ICT Infrastructure Issues

ICT infrastructure is considered and recognized as the most important and the big challenges and hurdle face by the E-Governance throughout the world. The ICT infrastructure determines the success rate of the governance rate in any country in the world. If a country has a good and sound ICT infrastructure, it will easily developed as compare to those which are not well developed in the field of ICT. In today advance and the modern time, the Internetworking and certain other way of internet connectivity are required and essential to enable appropriate and suitable sharing of the information and different other new material and most importantly open up certain new channels and ways for the communication purposes and as well as for the delivery and transfer of new facilities and services (Tapscott, 1996). Many developing and advanced countries in the world deeply suffer and effected by the digital split and divide, and as a result, they are not capable of deploying and organized the appropriate and suitable infrastructure of ICT for E-Government implementation and deployment. Suppose this is the condition of the developed countries in the field of ICT, then what will the actual condition of the developing countries like Pakistan. The digital split and division between the richer countries and the developing countries are large and wide. It has been observed that the countries with a high- income and developed economic condition have had 416 personal computers per 1,000 people, while on the other hand, the countries which are not developed economically and have a low-income economy only have 6 per 1,000 (World Bank, 2003).

The use of a computer is extremely important and vital in the development and in implementation of E-Governance in Pakistan. The statics given by the world bank shows that the countries which are not economically developed have less number of computer which is a basic tool in the ICT Infrastructure. Without the abundant amount of computer, the implementation of E-Governance is merely a dream.

The development and the advancement of the very basic and elementary infrastructure to capture and get the advantages and the rewards of the new technologies and the communications gears and tools is essential vital for the proper implementation of the E-Government and governance. Different admittance methods, for example, the remote access and admission by the cellular phones, by the satellite receivers, and also by kiosks, etc., these things are vital and are need to be taken by the government into consideration in order to find out that all members and citizens of the of society can be facilitated and served irrespective and regardless of their physical conditions and financial abilities and capabilities. The people in Pakistan are not capable of using mobile technology properly for the purpose of E-Governance. As it is reported by the Pakistan Telecommunication Authority, that the annual and yearly cellular tale density of Pakistan is over 74% of the total population of the country; this makes the rank of Pakistan 7th among the world top mobile phone using nations. According to the World Factbook. Mostly the ratio of the mobile subscribers comprises of young people and youth. Despite this large number of users of the phone the E-Governance is not that much strong and developed in the country, and the reason is that mostly the people don't know how to use the mobile phone properly they use it just spend their time in simple words just to time pass. (Aman et al., 2015).

However, it is important to note that the ICT infrastructure does not only provide limited to or simply consist and composed of telecommunications tools and different computer technology and equipment. Information and Communication Technology infrastructure has a very vivacious part in the developing of E-governance and considered a driving and powerful force for different organizations and institutions to implement the concept of e-services and governance. Both within and as well as outside the organizations and institutions, communication and contact are required in order to perform and achieve certain official tasks and duties. As the public sector organizations and the different institutions also seek and pursue the services and amenities from the different organizations and also to different institutions, so the basic ICT technology and infrastructure are essential and necessary for implementing and executing E-Government.

We are missing the rudimentary ICT substructure and setups. People are not capable of understanding the use of technology properly. Many businesses and industries are deficient in very rudimentary expertise. Inter organization contact and communiqué is thus far in the stage of discussion. Still, in this advance technology time, there is no concept and system of the online culture. (Senior Manager)

People of Pakistan, particularly the Khyber Pakhtun Khwa, are facing and confronting a huge amount of problems and hurdles in retrieving and accessing e-services due to the unavailability and lack of the basic and rudimentary ICT infrastructure. To guarantee the successful execution of the e-services, and governance the government of Pakistan requires to develop the ICT and mainly focus on it.

The concept of E-readiness and also the concept of ICT *literacy* are also very much necessary and important for people to become able to the proper use and the vital benefit from the E-Government applications. In order to take full advantage and benefits from the E-Governance, it is very much important and vital to have the proper of E-Governance.

Unavailability and lack of Internet

The unavailability of the Internet play a very vital role in the disturbance of ICT and also in the development of the E-Governance in Pakistan. (Bashir et al. 2016), it has been observing in Pakistan that most of the time, the availability of the network in different parts of Pakistan and specially in khyber pakhtunkhwa are not available which had a very bad impact on the governance issues and also in the implementation of E-Governance in Kp.

In Pakistan the penetration Broadband has greatly increased from 2.6 million subscribers to 36.6 million subscribers, this increase in the subscribe rate has occur since the introduction and the launch of the 3G/4G services in the year of 2014. But still, it has been notice that a large portion of the population is still deprived and underprivileged of the internet services and technology. We all know very well that for the successful run of the E-Governance the availability of the Internet in extremely vital and important. Also, for the successful run of e governance the quality of the internet services and also the internet connection requires and needs to be greatly developed and improved. In order to established and also to promote the concept e-democracy and also to made the country economy strengthen holistic and full solutions are needed and required to turn the digital divide into digital inclusion.

Inadequate Educational Capacity in ICT

For the proper run of the ICT and E-Governance, it's very much important that the citizen of the country knew much about the use of ICT technology and also have some knowledge about internet use. There is an inadequate and insufficient educational capacity in Khyber pakhtun khwa to understand and apply and implement the ICT solutions in the educational ecosystem. A gap does exist among the IT graduate skills and also in the IT industry needs. Information Technology as subjects is required and needed to be implemented and introduced in the educational curriculum of Pakistan and Khyber Pashtun khwa. The people must be given a proper education in order to make them aware of the importance of ICT and also about its role that they plays in the implementation of E-Governance. (Rahman et al., 2001).

Lack of Technology Parks & Incubators

Till date, the number of technology parks and more IT parks in Pakistan are 14(Hashmi & Shah 2013). The country needs to develop and established more technology parks countrywide. The government of Pakistan require to invest more in the technology incubators. Measures should be taken to attract international investors. The technological parks play a very vital role in the development of E-Governance, the technological parks and incubators are directly proportional to the development of the E-Governance. All the countries which have developed the system of E-Governance have a huge amount of development in the field of technology parks and also certain incubators (Hashmi & Shah 2013).

Lack of Innovative R&D

The concept of the Research and Development always remain a subject to the low priority and importance in Pakistan and most especially in Khyber Pashtun khwa. Both in public and also in private sectors the government

of Pakistan is not serious at all in the development of this sector of innovation and the R&D field. There is an absolute lack of innovation and invention in these areas of the ICT which extremely vital and important for the development of ICT sector.

Low ICT Literacy

ICT infrastructure and organization can never be productive and fruitful until and unless IT literacy and awareness exist and established in society. ICT literacy is compulsory and mandatory to empower in using the online services and facilities provided by the government.

IT literacy and knowledge are extremely poor and undeveloped. Unfortunately, the People in Pakistan in general and particularly in KPK do not believe and in technology. In reality, they have no idea what is this ICT technology and what are its basic uses and advantages they even don't understand the very basic esteem of ICT. (Manager Applications)

The Education and its Role in Understanding the E-Governance

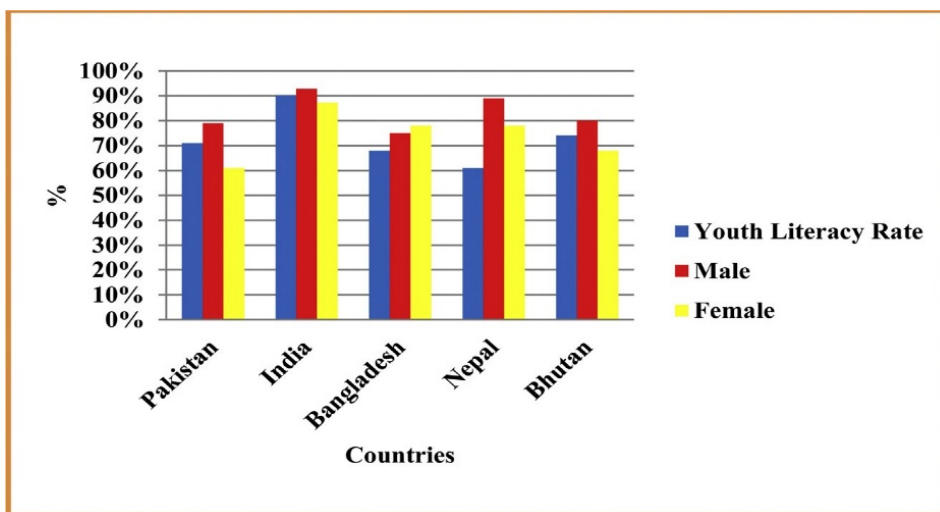
Pakistan has very little literateness frequency overall, and KPK in specific and information technology practices and usage is nil. The Citizens of the country are shy and cautious of using the computers and other technology available (Boissiere, 2004).

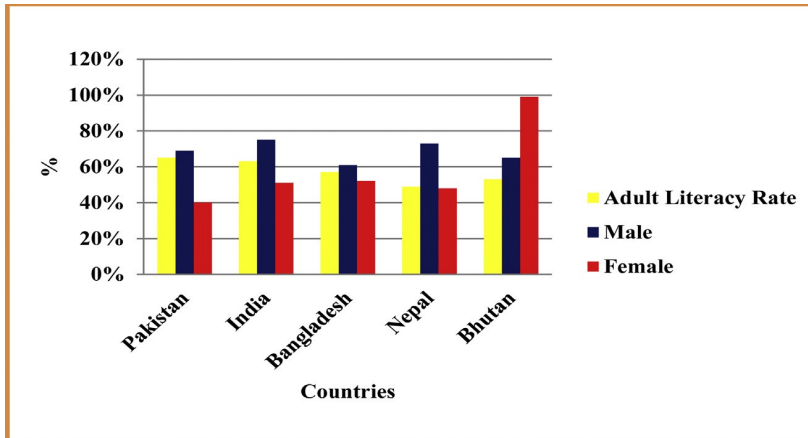
Education and governance are directly proportional to each other. The downfall in one will directly lead us down in the other. In Khyber pakhtun khwa the education is not very common, and thus it has an effect on all the other sphere of lives (Fuller et al.1999).

Pakistan is spending a very small amount of its GDP on education, the researcher suggest that Pakistan expend less than 7% of its GPD on education.

The rate of youth literacy in Pakistan as compare to certain other nearby countries like Nepal, Bangladesh, India, and even Bhutan are low, this lack of education put Pakistan behind in the race E-Governance as it required education which is not so often in Pakistan as compare to the other countries of the region.

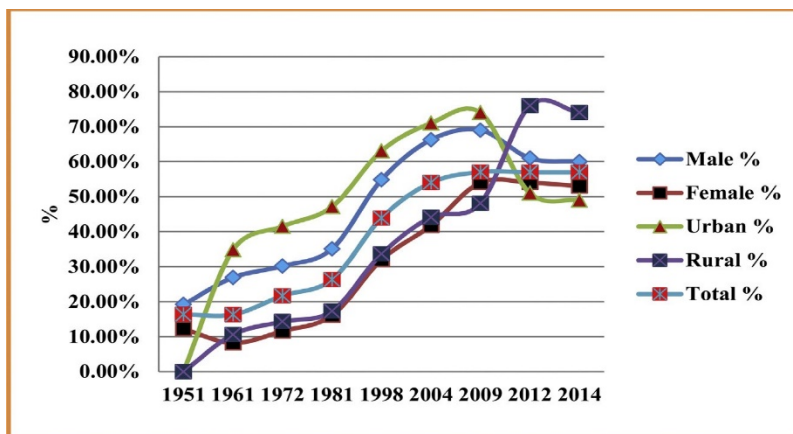
In Pakistan's the youth literateness rate is about 71%, among which males are 79% and the females are at 61%. In case of India's the literacy rate of youth is about 90.20%, among which the ratio of male are 92.90% on the other hand the ratio of are 87.20%, which is much higher than that of the Pakistan's literacy rate. Similarly, if we look to the youth literateness ratio of the Bangladesh which is about 68%, I which the ratio of male is at 75% and the ratio of females is at 78%. The literacy rate of Nepal is about 89%, among which the male's ratio is at 89% and the ratio of females lies at 78%.





The Rate of Literacy Over the Years

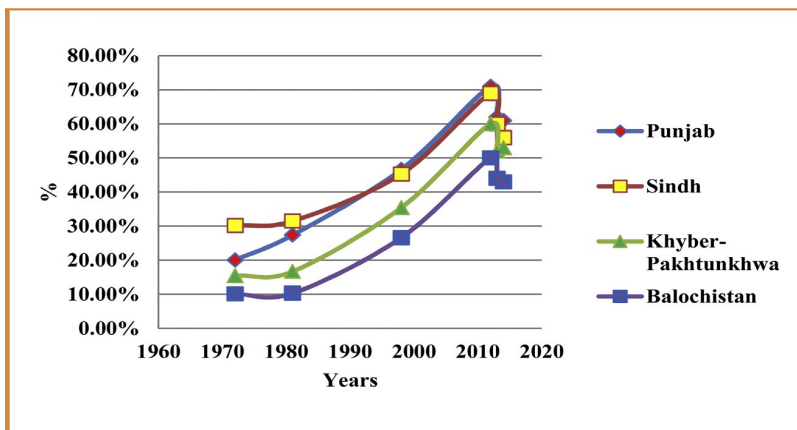
The literacy rate in Pakistan is one of the lowest literacy rate in the world. According to the survey conducted by the UNICEF estimated that the literacy rate in 2014 was only 55% which has not increased till date. This low literacy rate has a very deep and bad impact on the implementation of the E-Governance. The implementation of the E-governance require the knowledge. Without it the dream of the implementation of E-Governance is useless. Even in 2018 the literacy rate in Pakistan is not very much satisfactory.



Khyber Pakhtunkhwa and its Education

Due to the increase amount of terrorist and other growing number of the different security fears and threats, the people of the province are much worried about their families and are all the concerned anxious about sending their children to school. In 1972 the literacy rate was low and was about 15.50% and in 1998, the literateness rate of KPK reached to only 35.40%, in the year of 2012. The education and E-Governance go parallel they are directly proportional to each other the decrease in one will affect the other.

2013 and 2014, the literacy rate of KPK was only 52% and 53% respectively. The education determines the advancement of the E-governance and can affect the implementation of governance (Rahman, 2009).



Professional Workforce

An expert and specialized staff is extremely important to gadget and device the E-Government. In various Civic sector administrations there are deficient skilled and expert IT specialists due to so numerous reasons; one among these reasons is the system of a very low salary structure very little amount of money and thus this field attract very few people. The employ associated with these organizations are often paid very low. The secret of triumph of the E-Government execution is deeply exist and associated with the availability and obtainability of the ICT skills and expertise.

E-Government successful implementation requires and needs the mixed workforce and staff i.e. ICT based specialists and qualified administration.

We absence blend of technology based business and legal professional. The Old employ in the organization and institution hesitate and afraid to get trained in the ICT. It's not very much easy for them and thus it can be considered a very big hurdle and challenge for us in the implementation of E-Governance (Senior Manager)

Organization in Pakistan and particular in Khyber Pakhtoon Khwa are going to launch and implement the e-services and e-governance in the near future, but there is this big hurdle of the shortage and unavailability of the certain experienced man- power in different organization and also in different fields of E-Government. The different organization's existing the man-power has a very strong knowledge of the business but they desperately lacks and absence in the ICT expertise and the knowledge. Organization has already started the in-house drill and training programs in various institutions in order to train the employs and made them aware about the e-governance, but these steps are not sufficient and satisfactory to meet the needs current demands required by the successful implementation of E-Governance.

Collaboration and Coordination

Inter organizations collaboration is extremely important and vital component in the growth of E-Government and also to establish the complete gauge facilities and amenities.

Collaboration and team are extremely vital and essential in our daily business and also for the development of different organization. We need info from various different institutions and divisions. We are effective and well organized on our site, but we are missing and deficient is the collaboration among the various department, which often lead us to certain issues. (Manager Application)

Corruption and its Impact on the E-Governance

Corruption demarcated and explained as the misappropriation of the trusted and commended authority for the private and personal profit and advantages is very unfortunately widespread and endemic in the state of Pakistan, most especially in KP. There is simply no structure, neither a tier nor level, which is invulnerable

and safe from this disease of corruption. It's spread, and the blowout is huge and massive. The concept of corruption has stretched to each and every part of the government — beyond the executive; it has even placed its hooks and talons in the judicial system and as well as on the legislature of the country. There would be no overstatement and exaggeration to say that the whole country is facing this disease of corruption, and it has a deep impact on each and every sector. This corruption has also had a very bad impact on the progress and the growth of the E-Governance in the republic. Corruption is one of the most important hurdles in the way of the development of E-Governance in KP Pakistan. The reason behind this is that E-governance leads to accountability and the abolition of corruption. The officer and the staff don't want to implement this sort of governance in the country because then it will be declared as a force that will stop them from corruption. That's why they don't want to implement this governance in the country and in the KP Province particularly. Pakistan corruption index according to the transparency international:

Corruption Rank of Pakistan (2010-2018)

Year	Ranking of Pakistan	Total score achieved by Pakistan	No of the total ranked countries
2018	117	33	180
2017	117	32	180
2016	116	32	180
2015	117	30	180
2014	126	29	180
2013	127	28	177
2012	139	27	176
2010			

The corruption rank of Pakistan over the years: (1996-2009)

Year	Pakistan Rank	Pakistan ranking of corruption	Total No. of the Countries
2009	139	42	180
2008	134	47	180
2007	138	42	179
2006	142	20	163
2005	144	16	159
2004	129	19	147
2003	92	42	133
2002	77	26	102
2001	79	13	91
2000	N/A	N/A	90
1999	87	13	99
1998	71	15	85
1997	48	5	52
1996	53	2	54

Conclusion

E-governance plays a very vital role in the establishment of the country. Pakistan is a country that has taken several steps to establish this system in order to improve its economy and overcome certain administrative issues and problems. Pakistan is an emerging state, and there is a great opportunity for it in the commercialization sphere; and with this increased and enlarged commercialization, there is an instant and immediate need to enhance and increase its e-service and e-governance platform in order to broader crowds and classes.

In order to compete and go parallel with the rest of the world, the government of Pakistan has taken to many steps in order to develop and establish the concept of E-governance in the country. For example, Pakistan has introduced the concept of E-governance in the department of education, police, land and revenue, establishment,

and so many others and apart from that certain online portal has been launched in each and every district to make the life of the citizen comfortable and easy.

The government of Pakistan should have taken certain steps to move and transfer the e-services and E-governance from the federal level to the provincial level and then to the local council's level because the people of Pakistan have some deep and serious concerns and worries to utilize and apply the system of E-governance at the very basic level in order to give the maximum amount of advantages to the common citizen. The government of Khyber Pakhtoon Khwa also taken certain steps in order to enhance the E-governance system in the various department. The concept of the E-governance was launched in Khyber Pakhtun Khwa with the main purpose to bring certain changes in the field of governance and also made the citizen to access easily to the different information and made the people aware about their rights and other concerns and also certain grievances.

There are so many things that have been done by the government of Khyber Pakhtunkhwa in order to improve and enhance the concept of the E-governance in the various departments. Yet there are so many hurdles and obstacles in the way of the E-governance which the government need to be addressed and timely sort out to improve the condition of governance.

This will help us to find out the main hurdles that are confronted by the Khyber PakhtunKhwa government in the development of the E-governance in the province. In Pakistan and particularly in Khyber PakhtunKhwa we need a very strong political steadiness and administration reforms and modification to improve the quality of the E-governance in the Khyber PakhtunKhwa in order to improve the E-governance. The government need certain training program which made the people aware about the importance of E-governance and also made them aware that how can the E-governance effect and improve the life standard of the citizen. There is very big gap in this sphere the people don't know the importance of the E-governance and thus does not give any sort of proper attention to the implementation and development of the E-governance. The government of Khyber PakhtunKhwa must understand the importance of the E-governance through different training session arranged by the government.

Apart from that there is also lack of well-developed and equipped ICT infrastructure in the province which also play very vital role in the failure of the E-governance in Khyber Pakhtun Khwa. There are no proper equipments with the government, which made ensure the establishment and development of the E-governance concept in the province. The ICT infrastructure is extremely essential and vital for the development and the establishment of the E-governance in the province.

The lack of ICT literacy is extremely essential for the understanding of the E-governance tools and different sort of machinery which are extremely vital and essential in the development of the E-governance. The government need to pay a very proper attention to this ICT literacy which will improve the implementation of the E-governance to a very high extent.

Corruption mean the miss use of the authority Pakistan is unfortunately a very high in the Ranks of corruption. According to the survey conducted by the UN to find out the corruption among the different countries across the world the number/position of Pakistan was very high. This corruption rate effect the entire system and specially the E-governance. The E-governance is a counter attack to this corruption because it is very transparent and clear for of governance. If the government will become able to implement this system successfully, it will block the ways of the corruption and thus these things are not acceptable to the government official and they try to sabotages the E-governance. They adopted certain tools and tactics which will made the implementation of E-governance impossible almost or at least slow down the development rate of the E-governance in the country.

The low GDP and the weak economy is also a very big hurdles in the way of the establishment and development of the E-governance in the country. Pakistan is economically a deprived country and currently it is passing from the worst economic crises which had put a very bad impact on the E-governance. This weak economy deeply effect the E-governance system in the country and also in Khyber PakhtunKhwa.

The lack of weak internet availability is also a very big hurdle in the implementation of the E-governance in the country and province of Khyber PakhtunKhwa. Apart from this the geography of the province is widely spread and mostly based on hilly areas where the access of the Internet is very weak. The internet connection is the key factor in the development of E-governance in the country.

E-governance can be described as a proper and accountable system of governance. It made the people accountable for their deeds, and most importantly, it overcomes the concept of corruption very easily. All the developed countries across the world already made advancement and development in the sphere of E-governance. Suppose we say that there is a very big role of E-governance in the development of these developed countries, so it will not be a wrong statement. If the government of Khyber Pakhtun Khwa want to overcome the governance issues, they will have to overcome the issues in the implementation of the E-governance in the province and will make ensure the E-governance in the province.

References

- Ahmad, M. O., Markkula, J., & Oivo, M. (2012). Factors influencing the adoption of e government services in Pakistan. In European, Mediterranean & Middle Eastern conference on information systems (pp. 118-133).
- Ahmed, Z., & Ali, M. (2011). Smart House: Artificially Intelligent Home Automation System.
- Almarabeh, T., & AbuAli, A. (2010). A general framework for e-government: definition maturity challenges, opportunities, and success. *European Journal of Scientific Research*, 39(1), 29-42.
- Anonymous (July 19, 2014). National IT Board constituted. The Dawn News. Retrieved from <https://www.dawn.com/news/1120174>.
- Ansari, M. N. (2013). ICT skills proficiency of library professionals: A case study of universities in Karachi, Pakistan. *Chinese Librarianship: an International Electronic Journal*, 36, 72-84
- Babatunde, M. A., & Adefabi, R. A. (2005, November). Long run relationship between education and economic growth in Nigeria: Evidence from the Johansen's cointegration approach. In *Regional Conference on Education in West Africa*.
- Bannister, F., & Connolly, R. (2012). Defining e-governance. *E-service Journal*, 8(2), 3-25.
- Bashir, S., Mahmood, K., & Shafique, F. (2016). Internet use among university students: a survey in University of the Punjab, Lahore. *Pakistan Journal of Information Management & Libraries (PJIM&L)*, 9(1).
- Boissiere, M., 2004. Determinants of Primary Education Outcomes in Developing Countries. World Bank, Independent Evaluation Group (IEG), Washington, DC.
- Danida. (April 2012). *Using ICT to promote governance*. Danida study
- Fuller, B., Dellagnelo, L., Strath, A., Bastos, E. S. B., Maia, M. H., de Matos, K. S. L., ... & Vieira, S. L. (1999). How to raise children's early literacy? The influence of family, teacher, and classroom in northeast Brazil. *Comparative education review*, 43(1), 1-35.
- Ghayur, A. (2006). Towards good governance: developing an e-government. *The Pakistan Development Review*, 1011-1025.
- Gianfortune, R. (26 June 2014). *US trails behind leaders South Korea and Australia among others*.
- Haider, Z., Shuwen, C., & Burdey, M. B. (2016). E-Government Project Obstacles in Pakistan. *International Journal of Computer Theory and Engineering*, 8(5), 362.
- Hashmi, A., & Shah, A. (2013). Establishing national science and Technology Park in Pakistan. *World Techno polis Review*, 1(4), 264-275
- Heeks, R. a. (2007). Understanding e government project trajectories from an actor network perspective. *European Journal Information system*.
- Ilyas, M. (2016). E-GOVERNANCE PRACTICES AND MODELS; OPTIONS FOR PAKISTAN. *Institute for Strategic Studies, Research and Analysis (ISSRA)*.
- Jaeger, P. T. (2004). The social impact of an accessible e-democracy: Disability rights laws in the development of the federal e-government. *Journal of Disability Policy Studies*, 15(1), 19-26.
- Jaeger, P. T., & Thompson, K. M. (2003). E-government around the world: Lessons, challenges, and future directions. *Government information quarterly*, 20(4), 389-394.
- Kandhro, S. H. (2011). *Rol of E-Government in Enhancing Good Governance of Public Sector Organizations in Pakistan* (Doctoral dissertation, National Institute of Development Administration),
- Khan, F., Khan, S., & Zhang, B. (2010, October). E-government challenges in developing countries: a case study of Pakistan. In *2010 International Conference on Management of e-Commerce and e-Government* (pp. 200-203). IEEE
- Kremer, Michael, Chaudhury, Nazmul, Halsey Rogers, F., Muralidharan, Karthik, Hammer, Jeffrey, 2005. Teacher absence in India: a snapshot. *J. Eur. Econ. Assoc.* 3 (2e3), 658e667
- Kumar, V., Mukerji, B., Butt, I., & Persaud, A. (2007). Factors for successful government adoption: A conceptual framework. *Electronic Journal of E-government*, 5(1).
- Mahmood, S. (2007). *Good governance reform agenda in Pakistan: current challenges*. Nova Publishers.
- Malik, S. (2017). E-Government in Pakistan: Prospects & Challenges. <https://www.pakistankakhudahafiz.com/e-government-pakistan-prospects-challenges>.

- Merchant, J. A., Cook, T. M., & Missen, C. C. (2007). The role of information and communications technology. *Bulletin of the World Health Organization*, 85(12), 970-970.
- Milliman, R. E. (2002). Website accessibility and the private sector: disability stakeholders cannot tolerate 2% access! *Information Technology and Disabilities*, 8(2).
- Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the Internet worldwide*. Cambridge University Press.
- Pakistan, F. i.-G. (2010). *Digital Information Management (ICDIM) Fifth International Conference*, (p. 120).
- Palvia, S. C. J., & Sharma, S. S. (2007, December). E-government and e-governance: definitions/domain framework and status around the world. In *International Conference on E-governance* (pp. 1-12).
- Rahman, A.U., Uddin, S., 2009. Statistical analysis of different socio economic factors affecting education of NW. FP (Pakistan). *J. Appl. Quant. Methods* 4 (1), 88e94
- Rehman, M., Esichaikul, V., & Kamal, M. (2012). Factors influencing e-government adoption in Pakistan. *Transforming Government: People, Process and Policy*, 6(3), 258-282.
- Siraj, Mazhar, 4 July 2010. Increasing Education Expenditure to 7 Percent of GDP in Pakistan: Eyes on the Miracle. *Business Recorder*, Islamabad.
- Tapscott, D. (1996) *The Digital Economy*, New York: McGraw Hill.
- World Bank, Washington, DC. (1991). *World Development Report 1991: The Challenge of Development*. ERIC Clearinghouse.