

# 개발도상국의 전자정부 시행에 따른 장점과 문제 -파키스탄 중심으로-

무하마드 아프تاب  
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## E-Governance Practices in Developing Countries. Its Benefits and Challenges. -The Case of Pakistan-

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**요약** 정부가 시민들에게 제공하는 서비스의 질은 현대 사회에서 우려의 대상이다. 전자 정부는 정보 기술의 응용을 통해 정부 운영 및 서비스 제공을 시민과 다른 기관으로 전환시키는 중요한 요소이다. 본 연구는 파키스탄에 특별히 주의를 기울여 개발도상국에 초점을 맞춘 전자 정부의 상태를 연구한다. 막대한 어려움과 이점이 확인되었다. 결과는 이들 국가의 전자정부 시스템 구현에 중요하다. 적용된 방법론은 연구 주제와 관련된 문헌의 분석과 종합을 포함하는 2차 연구를 수반한다. 그 결과 파키스탄은 인터넷 사용의 증가와 디지털 플랫폼의 데이터 액세스를 통해 전자 정부 시스템을 구축하는 데 놀라운 단계를 밟았음을 보여준다. 연구 결과에 따르면 전자 정부는 서비스 품질 향상, 서비스 제공 비용 효율성, 부패 방지 및 투명성 제고, 빈곤 퇴치를 위한 기반 제공, 국가의 경제적 안정성 향상, 직접 민주주의. 이 연구는 또한 개발도상국들이 재정적 제약, ICT 인프라 부족, 전자 정부에 대한 문맹, 정치적 합의의 조건, 법적 장애, 사회적 및 문화적 제약 등의 형태로 어려움을 겪고 있음을 발견했다. 전자 정부는 정부가 제공하는 정부의 질을 변화시킬 수 있는 능력을 가지고 있으며, 정책 입안자와 구현자는 구현에 방해가 되는 제약 사항을 해결해야 한다.

**주제어** : 전자정부, 전자정부, IT, ICT, 디지털 플랫폼, 개발도상국

**Abstract** The quality of service delivery by governments to their citizens is a subject of concern in the contemporary society. E-governance is a critical aspect that is transforming government operation and service delivery to citizens and other bodies through application of information technology. This research explores the state of e-governing focusing on nations that are developing with special attention to Pakistan. The difficulties and benefits encountered are identified. The results are vital for implementers of e-governing systems in these countries. The methodology applied entails a secondary research that involves analysis and synthesis of literature relating the research topic. The results reveal that Pakistan has made incredible steps in setting up e-governance systems with growth in internet use and access of data from a digital platform. The findings reveal that e-government is associated with multiple benefits including enhanced quality of services, cost efficiency in service provision, enhance transparency and elimination of corruption, provide the basis for eradication of poverty, boost economic stability of a country, and provide room for direct democracy. The research also found that developing countries experience challenges in form of financial constraints, poor ICT infrastructure, illiteracy on e-government, political consensus constraints, legal obstacles, social and cultural constraints. E-government has the capability to transform the quality of governance provided by governments, and policymakers and implementers should address the constraints that act as a hindrance to its implementation.

**Key Words** : e-governance, e-government, IT, ICT, digital platforms, developing countries

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## 1. Introduction

Concept of e-government is shaping the contemporary governments in terms of handling of information, disseminating the same to their citizens and providing the same in general. E-government is built around the concept of using internet enabled digital components to reach and provide services to citizens and private sector in the society (Palvia & Sharma, 2007). Although, in the developing nations' context, Chen et al., (2006), Dada (2006), and Ndou (2004) have explored the aspect of e-government in the context of developing countries, but little has been put across in terms of how Pakistan has fared in terms of implementing e-government. Literature on e-government might be rich, but does not capture the situation in Pakistan at a time when other developing countries are building ICT platform to enable e-government. A critical aspect shaping the perception of e-government in Pakistan is the idea of awareness of the concept, being able to use and trust the internet, the quality of information of obtained from digital platforms, and the security of a transaction executed over the internet (Rehman, Esichaikul, Kamal, 2012). Diversely, Ovais et al. (2013) address the aspect of performance expectancy, availability of facilitating conditions as element that may factor the willingness of the public to embrace e-services. Common challenges in Pakistan and other similar countries include lack of resources, lack of literacy on e-government, and issues of management that would otherwise facilitate implementation (Qasar & Khan: 2010). Past research on e-government has had focus on matters e-government across various regions but has gone silent on the depth of e-governing performance in developing countries including Pakistan. Against this background, this research works to evaluate the state of affairs on matters e-government in Pakistan, to explore the aspect of potential benefits associated with e-governing systems, and the factors

hampering the implementation of the same in Pakistan.

The findings of this research are anticipated to help practitioners and planners in e-government development discourse in Pakistan to conceptualize the extent of applying ICT in dissemination of information of services, the benefits that may accrue with the same and the challenges likely to experience during the implementation process.

## 2. Literature Review

Palvia and Sharma (2007) provide a foundation for defining both words as they term e-governance; a form of delivery of governmental services to three categories of members of the society; the citizens, government agencies and businesses. They assert that this is achieved through the internet-enabled digital devices. They further limit the meaning of e-governance to the act of managers and supervisors applying both the internet and information technology to accomplish administrative duties. Qaisar & Khan (2010) defined electronic-government considering the use of IT to accomplish governmental activities in terms of providing basic services and engaging with citizens for their own good. The author reveals the aspect of information being offered to the public in electronic form. He further defined e-governance as the government and civil society's application and use of ICT technology to accomplish the responsibilities that entail serving the citizens and the public in general. The diverse aspects from authors with views arrived at different timeframes led to the following definitions:

E-government entails the application and the use of internet-enabled digital platforms by a government and its agencies to provide services to members of a given country or region. On the other hand, e-governance is the aspect of exercising a given form of authority over the internet by use of IT to ensure the intended services arrive to the target group of people.

A research by Bhuiyan (2011) found that e-governance is vital for enhancing the quality of government functions as governments are able to structure information in a manner that is customer-centered. This facilitates the provision of services in a cost-efficient manner at a time when many societies in developing countries are straining financially. Bhuiyan (2011) further confirms that e-governance in such countries as Bangladesh has enhanced transparency as citizens can access digital information via the internet. The public is able to make follow-ups and identify how public resources are used at the national level. This has in a huge way eliminated cases of corruption in many countries.

Rossel and Finger (2007) assert e-governance is more than the application of IT infrastructure to handle information. It is a tool that has given government agencies the ability to transform institutions in terms of how they are operated, how rules are structured, and how administrative activities are executed. This makes it possible to address such national policies as the reduction of poverty in developing countries. This is achieved through proper planning as enabled by IT infrastructure, informed allocation of resources across various sectors including education, and through using of digital information to hold agencies and individuals accountable (Bertot et al., 2010; Carlout al., 2012). With access to internet-enabled platforms as social media, the public is able to collaborate with the government agencies and monitor their activities. This has the potential to enhance the economic stability of a country (Bhuiyan, 2011). Research by Srivastava together with Teo confirms that electronic governing and commerce are vital ingredients for national economic performance of any given country.

Implementing e-government in developing nations faces a set of obstacles. Kayani et al. (2016) highlight cases of lack of financial resources to set up ICT infrastructure and frameworks in Pakistan and other nations. Countries lack the capacity to acquire capital and human resources to facilitate the same. Khaisa and

Khan (2010) similarly address the issue of financial constraints, and further identify cases of e-illiteracy as a major hurdle. Many countries lack skilled human resource to implement e-governance policies and use related ICT facilities. Other challenges identified by the available literature are in the form of political consensus constraints, legal obstacles, and social and cultural constrains (Bhuiyan, 2011; Kazmi, 2010; Kayani et al., 2011; Ovais Ahmad, Markkula & Oivo 2013, Qaisar & Khan, 2010).

### 3. Methodology

This paper is primarily based on analysis and synthesis of secondary data. Clark (2013) asserts that secondary data that is based on primary research provides a real-time context of the content under study. Webster and Watson (2002) purport that considering past literature review provides a chance to consider the alterations in a given field of study over a given time. A researcher is able to synthesize and reflect upon the findings presented by other scholars and compare the content to identify gaps and areas that might need further research. This set of ideas empowered the approach used in this study where various groups of secondary data are considered. The first category considers peer-reviewed academic journals, books, and newspapers from which data was obtained regarding Pakistan and other similar developing nations. The second category features policies and reports as offered by global entities, Pakistan government, and other organizations. The paper also considers websites belong to agencies in Pakistan to assess then measure the perception of benefits of e-governance, and to identify possible challenges experienced during adoption of e-governance in the nation and other developing nations.

Objectives addressed in the study include:

- i. What is the status of e-government in Pakistan

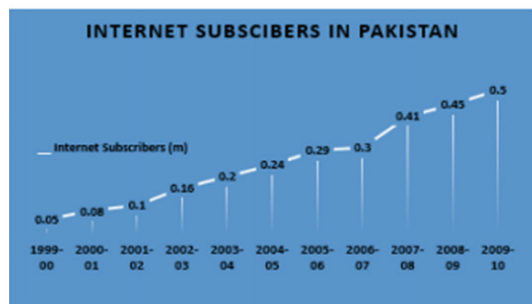
currently?

ii. What are the expected benefits of serving people using electronic services?

iii. What are the challenges faced in implementing e-governance in Pakistan and other developing countries?

#### 4. Results and Findings

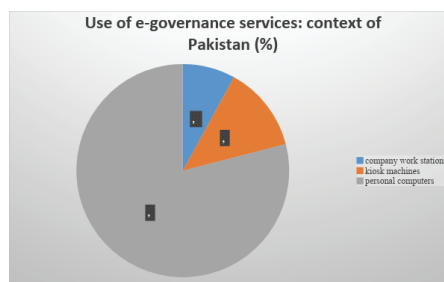
There has been a significant improvement in IT infrastructure in Pakistan from a level of 2.8% in the year 2000 to a 64% growth by 2009 (Reddick, 2010). The internet users in the country increased from 10 thousands to 10 million between 1999 and 2009. Generally, Internet subscription has also been on an upward trajectory since the inception of e-governance services and efforts to promote public and the government staffs' adoption of the e-governance (Shuwen, Haider, & Burdey, 2016). Data from the Pakistan Telecommunication Authority indicates that the number of individuals who are subscribed to the internet in Pakistan rose from less than 50000 in 1999 to more than 500,000 in 2009 (Qaisar & Khan, 2010).



[Fig. 1] MS Excel (output) – Source PTA (Pakistan Telecommunication Authority)

Increased subscription to the internet in Pakistan has been critical in promoting consumption of e-governance services in the public (Yildiz, 2007). Statistics indicate that the Pakistani public enjoys these

more followed by kiosk machines and company workstation.



[Graph 1] Use of e-governance services: context of Pakistan (%)  
Source: Yildiz, M. (2007).

The country has been able to; establish a high speed internet, put in place in the ministry of IT and Telecom, create the national registration authority and database, formulate the national IT policy, and has been able to avail such services as online tax filing and an electronic database for land ownership ((Baqim & Pervez, 2000; Muhajid, 2002; Reddick, 2010). The table below provides a glimpse on the extent of e-government operation.

<Table 1> E-government related projects on Pakistan

**Operations supported by E-governance in Pakistan**  
(As facilitated by of electronic government directorate)

Online application and processing of Hajj
Online tracking of status of Hajj
Online Nadra Card Application
Accessing Statutory Case Laws Online at District Bar Associations (DBA)
Automating Patent Office, in Karachi
Digitizing the Senate & National Assembly of Pakistan
Online Nadra Card Application
Estate Office Automation
Digitizing the Press Clubs
Development of PPHI Website
Electronic submission of items at Pakistani Securities and Exchange Commission

Source: Rehman, Kamal, & Esichaiikul (2016).

The findings further reveal that Pakistan e-government readiness index improved in the base years of the program implementation in the early 2000s but its ranking has been on a decline as compared to other 192 countries that are members of the United Nations (Veljković, Bogdanović-Dinić, & Stoimenov (2014). The decline in e-government readiness index can be attributed to the myriad challenges that the country experience in its effort to implement and roll out e-government services. Analysis of data indicates that Pakistan recorded a global e-government readiness index average of 0.4020 in 2003 when Pakistan was ranked 137 (Qaisar & Khan, 2010). However, the ranking improved in 2004 when the country was ranked 122. However, since then, the country's ranking has been on a downward trajectory and in 2010, Pakistan was ranked 146 (Qaisar & Khan, 2010). Studies have established that e-government services have promoted the adoption of social media platforms which are used as a link of connecting citizens and government agencies (Shaikh, Shah & Wijekuruppu, 2016). Despite the decline in ranking, the Pakistan government has established increased technical and financial support in the establishment of Pakistani e-government. The Pakistan government under the Ministry of Information and Technology (MoIT) has established comprehensive information technology and telecommunication programs and projects; the Pakistan Computer Bureau (PCP) has established computer training to government employees (Yildiz, 2007). Additionally, the government under the electronic government directorate spearheads e-government effort in the rural areas.

Diversely, a related developing country in form of India has registered multiple cases of utilizing the world-wide web to conduct business and access information, has seen distribution of information in digital format by government agencies and education institutes, but most of the government websites are non-interactive, and the internet is just used to

(Table 2) Global e-government readiness

Year	Index	Rank	Rank Challenge	World Average
2003	0.2470	137		0.4020
2004	0.3042	122	+15	0.413
2005	0.2836	136	-14	0.4267
2008	0.3160	131	+5	0.4515
2010	0.2755	146	-15	0.441

Source: Qaisar & Khan

facilitate information transfer and storage with low level of integration in public management framework. In Sub-Saharan Africa, countries like Kenya have seen application of IT and establishment of IT structure with usage in such areas as issuance of identification documents, passports, application of public service jobs, filing of taxes, with Raddick (2010) putting the country at the same level as Pakistan, India, and Senegal in terms of e-governance capacity. Nevertheless, Ngulube (2007) asserts that a significant proportion of developing countries like Pakistan and those in Sub-Saharan Africa experience cases of insufficient IT infrastructure, cases of e-illiteracy, and collapsing record management systems.

## 5. Challenges

The research indicates that the biggest e-government challenge that Pakistan faces is the lack of efficient ICT infrastructure in the country. The ICT infrastructure is the fuel behind implementing of the e-governance programs (Shaikh, Shah & Wijekuruppu, 2016). Majority of the members of the public fail to access these digitized services owing to absence of basic ICT infrastructure (Rehman & Esichaikul, 2011). The public lack infrastructures such as smartphone, personal computers and public access to government infrastructures such as computer cafes (Rehman & Esichaikul, 2011).

Low ICT literacy is the other major challenge

facing e-government in Pakistan. Majority of the public have limited knowledge and skills on how to go about using these services despite government effort to avail the services. Khan and Zhang (2010) posit that ICT literacy is mandatory to empower the use of online services by the public. The public has limited believe in technology which indicates that the government has failed to conduct awareness campaigns to promote public knowledge and skills (Rehman & Esichailuk, 2011). Qaisar, & Khan (2010) established that the majority of the education and training programs are directed towards government employees with a very limited effort being directed to the public. Despite the public being the recipients of the e-government services, they have no concept of what entails technology. Majority of the public are shy to use online services while some do not rely completely on online information (Shuwen, Haider, & Burdey, 2016). Fear of technology and changes in the traditional way of doing work makes the majority of the public members to shy away from the services.

Contrary, the management in Pakistan supports resistance to change to electronic ways. E-government often causes a significant change in an organization (Haider et al., 2015). The centralization of government services through e-government modifies the role of government officials in different sectors of the government (Arfeen & Khan, 2009). The concern of losing control over the government roles makes some officials to resist the change and thus, compromising the adoption of e-governance in the country. Less receptive culture should be faced out by staff members by employing programs that are intended to transform the culture. E-government has proved to be challenging without top leadership involvement. Kayan et al. (2011) had found that a lot of capital investment and operational costs are needed to change the perspective of the reluctant government staff and organizations to adopt the solution. People have less exposure to using modern technologies; the resistance

from the leadership can have a massive negative impact on the will of the public to consume e-government services (Haider et al., 2015). The findings coincide with Qaisar and Khan (2010) who established that e-government disturbs the hierarchical structure of governments departments and sectors causing the government staff to respond by resisting the new technology.

Lack of professional workforce is a main obstacle affecting e-governance in Pakistan. A professional workforce is a main enabler in the effort to implement e-governance service provision platforms (Haider et al., 2015). Pakistan professional workforce lacks adequate skills required for setting up an e-government successfully in Pakistan. Similar results were established by Ahmad, Markkula, & Oivo (2012) who found that low salary structure affects the ability of the professional workforce to gain the required skills for successful implementation. Similarly, Haider et al. (2015) established that the old employees hesitate to get the necessary training to get align their skills with the new technologies. The existing workforce has strong management and business knowledge but lacks ICT knowledge (Haider et al., 2015). The shortage of knowledgeable workforce affects the ability of the government to meet both the government staff and public needs to effectively implement and consume government's e-services

There is inadequate of collaboration between different government departments and organizations affect the availability of information needed by the public from the e-government sites. Information that is not in the digital form needs to be converted through concerted efforts and lack of collaboration affects such effort. Similar results were established by Azam, Qiang & Abdullah (2013) who found a lack of collaboration between the government and private organizations hinders information availability which is a critical necessity in the e-governance.

## 6. Conclusion

Pakistan and the rest of the developing world are rapidly adopting e-government programs due to the benefits associated with these services. The services provide an opportunity to increase accessibility to services offered by the government, tend to lower the cost of administration, enhance improved access to documents,

As well as facilitating increased government transparency and accountability (Schuppan, 2009). While the e-government services serve an important role in easing public access to government services, adoption of e-governments experiences significant challenges. Inadequate funds to establish efficient ICT infrastructure, lack of professional ICT skills and a culture that resists new technology are major problems that face most of these countries (Sarrayih & Sriram, 2015). Policymakers and implementers would have to familiarize with these aspects e-governance in these countries to become a reality.

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