

Digital Government Initiatives in Balochistan: a case study

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ABSTRACT

This research study¹ aims to analyse the digital government initiatives in Balochistan. The study finds that there is a lack of e-readiness even if public sector officials are willing to use Information and Communication Technologies (ICT) to enhance their performance. In Balochistan, political, social and economic instability are found to be the main barriers to digital government initiatives. Digital government projects are initiated but generally end in failures. The federal government and international donor agencies are often hampered in their efforts to roll-out any ICT infrastructure or educational projects in Balochistan due to the small minority of separatists who have control of vast arrays of land in this region. This research constitutes an important contribution towards ICT for Development in general, and particularly in the context of Pakistan. This paper is based on case study research with special focus of ICT development in Balochistan province, the largest of the four provinces in Pakistan, which is located in a strategic position and is bordered by Afghanistan and Iran. Findings may help improve ICT projects success rates.

CCS CONCEPTS

• Information systems

KEYWORDS

Balochistan; Citizens; Digital Government; ICT; Officials; Policy.

1. INTRODUCTION

Digital, or electronic, government refers to the use of digital technologies as an integrated part of government modernization strategies to create public value [1]. Improved access to ICT and digital literacy are necessary to narrow the digital divide and advance sustainable development [2, 3, 4]. The quality of public services has improved due to the digital government initiatives; however, in developing countries like Pakistan, due to the multitude of restrictions and decreased rate of implementation, the scope of the aforementioned impact is limited [5, 6].

The Government of Balochistan initiated many ICT projects to improve public services. However, most of the initiatives were not able to deliver the envisaged benefits and outcomes because of the lack of IT trained human resource and infrastructure [6, 7]. In the current paper, the authors aim to tackle the following question: *What is the perception of Balochistan government employees in relation to digital government initiatives?*

The structure of the remaining paper is as follows: Section 2 offers insights into the ideas gained from the literature review i.e. examining digital government issues in developing countries. Section 3 discusses the digital government initiatives and how policy is linked to digital government. Moving onto Section 4, the research patterns identified in this study are discussed. Section 5 provides the findings based on surveys and interviews. Section 6 relates the findings in the light of current literature. Finally, Section 7 provides concluding remarks.

2. LITERATURE REVIEW

Digital government initiatives with help from donor agencies tag with “Information and Communication Technologies for Development” (ICT4D) emphasize poverty eradication; expectations are very high. There is a need to study indigenous and ground realities before embarking on these projects [8, 9]. In developing countries, ICT implementations face problematic issues, such as scarcity of IT infrastructure, lack of IT Human Resource, ICT business needs, and vague benefits of ICT use and behavioral barriers [10, 11].

3. NATIONAL DIGITAL GOVERNMENT INITIATIVES

The digital government in Pakistan relates to numerous ICT initiatives. According to the United Nations Digital government study [10, 12, 13, 14], measured for 193 countries, Pakistan’s ranking in the Electronic Government Development Index (EGDI) was 137 in 2003, which first improved then dropped to 159 in 2016

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(Figure 1). In e-participation (EPART), Pakistan’s ranking dropped from 63 to 114 in the period 2003-2016. Except Afghanistan, all Pakistans neighbor countries are performing (see Figure 2).

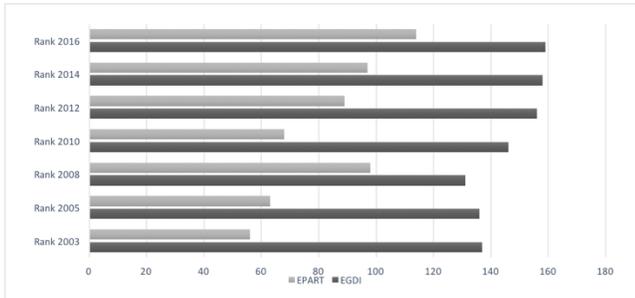


Figure 1: United Nations digital government Development Index for Pakistan²

3.1 Government of Balochistan

The Balochistan government has fewer ICT initiatives than other provinces in Pakistan. The government of Balochistan formulated its Digital Government Policy in 2008 in line with the Federal Government Policy [11]. Most of the time, provincial government departments are only requesting PCs and are essentially treating the Ministry of IT as a show for IT equipment. By contrast, assessment is required before embarking on digital governments [10, 14, 15]. The Balochistan Government is also facing brain drain problems and an law and order situation. Nevertheless, citizen centric services should be the core objective of Government of Balochistan (Figure 3).



Figure 3: digital government Vision for Balochistan.

Balochistan is considered relatively poor in terms of internet and digital skills when compared to other provinces in Pakistan. Balochistan has lower literacy levels, is less urban, has less internet availability and penetration when compared to the rest of Pakistan.

4. METHODOLOGY

Assessment was carried based on data triangulation e.g. reports, surveys, interviews and focus group discussion. Featherman et al., [16], emphasizes the need to assess user’s capacity. During the survey, a questionnaire was distributed to the officials [17]. The reason for this survey was to evaluate the e-readiness of public officials. The interviews did not disclose all the required information, hence the questionnaire inferred important statistics, point of views, and captured the missing data [18]. Thus, data was collected consistently and covered the specific respondent i.e. higher level bearcats in government of Balochistan. Table 2 details

government organisations and officials that have been approached and the data collected during the fieldwork:

Table 2: Exploratory Work (Government of Balochistan)

Provincial and District Departments	18 Provincial Departments	3 Districts	Total 21
Surveys and Interviews conducted	25 Officials from Provincial Departments	20 Officials from District Departments	45 Officials

ICT has been actively pursued in Balochistan. A political willingness is there but lack the capacity and resources [19, 20]. The fruitfulness of the digital government services is strongly dependent on the willingness of the customers to adopt, and their ability to avail from the digital government services [21]. Over time the importance and strategic emphasis has naturally shifted, as described in Table 3.

Table 3. Digital Government in Pakistan, 2000-2017 [22, 23]

2000	IT Policy and Action Plan
2005	E-Government Strategy and 5-Year Plan for the Federal Government
2012	Abridged E-Government Strategy of Pakistan
2017	Digital Pakistan Policy 2017

5. FINDINGS

A survey was carried out to assess the perception about digital government in Balochistan (see Figure 5). Most of the officials share the view that digital government implementation can increase efficiency of government services delivery. Majority of officials have also agreed that by installation digital government applications in government offices, but asked for the capacity building. It underlines the willingness of government officials to take on the change in their daily work regardless of their IT skill capacity.

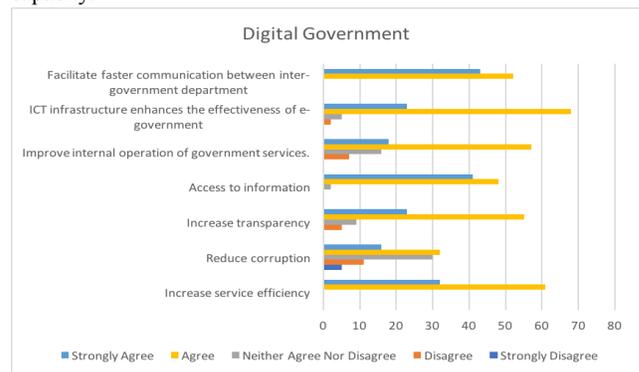


Figure 5: Survey results

Prior to this study, it was expected that government officials would resist digital government initiatives, however, analysis reflects their willingness and interest in digital government. Diffusion of ICT in

² Source: <http://www.unpan.org/egovkb>

the routine work of the organisation is an important indicator of its acceptance for new technologies and readiness for innovation [24]. In this regard, the internet is particularly important as it is not only an efficient mean of communication, but is also an important source of information. However, promoting ICT innovation processes in developing countries is not an easy task; in this context, innovation may simply mean adopting techniques and producing goods that were not previously produced in the country [25]. So, making new and updated changes are complicated because of the scarcity of resources and lack of IT skills in the government organizations.

Table 4.1: Summary of Interview Findings

Category	Government of Balochistan: situation	Findings/Remarks
Capacity Building	Finance Department: Launched 1 week training with new account software. The budget making process starts in March and needs four months for announcement.	Government policy must be made available on website. A contradiction is there between the figures in the files and internet, which otherwise, should be the same. There is inconsistency in government policy.
Lack of IT Faculty/ Teachers	Government Educational Institutions: 1500 computers were distributed in Balochistan, almost 10-15 in every lab of the school. The computers have remained unused from the last four years.	The purpose of the provision of computers was not achieved as they were locked by the headmasters due to the non availability of unstructors and fear of the computers being misused. Letters took more than a month to reach its destination due to far flung areas.
Lack of IT / Digital Skills	IT Institute Government of Balochistan, Quetta: 250 public sector employees out of 450, who got training in IT, passed the exam.	Deficiency of IT skilled manpower Least bothered about IT knowledge.
Lack of IT Knowledge	District Quetta, capital of Balochistan: Data based forms to 9700 officials were provided to fill and return.	In one year, only 200 respondents returned the forms which is below satisfactory level.

These findings provide a detailed snapshot of digital government initiatives and highlight the challenges/issues faced by government

departments for implementing digital government in Balochistan (see table 4.1). **Major Theme emerged from these categories:**
Lack of ICT Skills: 1500 computers were distributed in Balochistan, between 10-15 in every lab of 95 government schools, which covers more than 90% Higher Secondary Government Schools in Balochistan. The purpose of the provision of computers was not achieved as they were locked by the headmasters due to the non-availability of instructors and fear of the computers being misused. The computers became obsolete and useless as they remained unused by the students during the last four years. Thus, the purpose of provision of computers was not achieved. 250 government officials out of 450, who got training in IT, passed the exam in the IT Institute of Quetta. This training can be considered as short courses for government employees to handle day to day work in offices. In some government offices, staff was not provided any chance for training due to limited finances. The training program at local level is malfunctioned due to fewer promotion chances of training the instructors, DSL and networking may be made available.

Table 4.2: Summary of Interview Findings

Category	Government of Balochistan: situation	Findings/Remarks
Lack of Incentives for Government Officials	Balochistan Public Service Commission: 12 vacancies were created to hire IT officers at district level but hired only 4.	Highly skilled human resources are not interested to work in backward areas Need to provide perks to attract the skilled manpower Need to offer incentives
Lack of Finance	Education Department: In 1990, BEMIS was developed. Its data is used by decision makers and planners. They used to collect data from 11895 schools annually.	Data was needed to be gathered in April and October but it was gathered in October only due to financial limitations. To update the BEMIS and make available the data online were the interests of Education department.
Lack of Resources	Rural Development Authority: The training program at local level is malfunctioned due to fewer promotion chances of training the instructors, DSL and networking may be made available.	Facing financial constraints; the staff was not provided any chance for training due to limited finances, moreover, training equipment is not available to meet the requirement.

Major Theme emerged from these categories (see table 4.2):

Lack of Financial Resources: 12 new positions were created for district IT officers but only 4 were hired in IT as District Officers with the remainder being left vacant. Now, the criteria for hiring have been intended to be relaxed by the commission at BPS-17 junior-level-bureaucrats. In 1990, BEMIS was developed. Data was needed to be gathered in April and October but it was gathered in October only due to financial limitations. Data was collected from 11895 schools annually. To update the BEMIS and make available the data online were the interests of Education department. Letters took more than a month to reach its destination due to far flung areas.

Table 4.3: Summary of Interview Findings

Category	Government of Balochistan: situation	Findings/Remarks
Lack of Infrastructure	Agriculture Department: <i>Water management system and agriculture policy are not online</i>	To highlight the three basic components: Research, Agriculture Engineering and benefits rendered by the agricultural secretariat, a website should be developed.
Terrorism	Higher Educational Institutions: Data computer lab was build in the University 'X' with a cost of Rs. 25 million provided by HEC.	Due to the showing of them as burnt without any apparent evidence, one may say that there are factors which do not want development in IT sector.
Lack Of Coordination with other Districts	District Lasbela	The online exam software was built and used successfully.

Major Theme emerged from these categories (see table 4.3):

Terrorism: In Balochistan, political, social and economic instability can be considered as major barriers to digital government initiatives. Feudal leaders (Sardars) compel people to avoid education and resist construction of schools, roads and other infrastructure in their areas. People are given the message that education is bad. Common people cannot be employed unless forwarded and recommended by the respective Sardars. The implication of this is that the federal government and international donor agencies are often hampered in their efforts to roll-out any IT infrastructure or education projects in Balochistan because of the small minority of separatists who have control of vast arrays of land in this region.

6. DISCUSSION AND CONCLUSIONS

Interviews highlighted the challenges and several themes emerged out of the survey and the interview: A lack of IT skills, scarcity of infrastructure, scarcity of resources and deficiency of capacity building can be considered main obstacles, thus confirming Adam

& Urquhart [26] regarding the need for capacity building in developing countries. Government departments are trapped into purchasing computers, connecting them but not being able to achieve the desired results[27], thus highlighting the need to focus on proper pre- and post-implementation assessments and benefit realisations as recommended by [10, 12-14, 15, 28, 29]. It is clear that digital government and online public service supply and use has not yet been a success in the Balochistan context. Pre-conditions like internet availability and the digital skills of citizens are also not in place. Citizens are interested in e-services but low teledensity and slow start. There is a lack of cooperation between government authorities and they are working in isolation at federal, provincial, and district level.

7. CONCLUSION

There is a need to address the indigenous issues in developing countries and to adopt the digital government projects as per their requirement [27, 30, 31]. Balochistan case highlighted the hurdles in digital government, and reflect barriers also seen in other emerging economies such as lack of human, financial, and governance capacities. Nevertheless, government officials are willing to use ICT for their day to day work and to provide online services to its citizens. Thus, this will help minimize the risk of failure. Currently, the Government of Pakistan has shifted its focus towards digital government by locating funds [23]. It will have the trickle down effect and help the Government of Balochistan improve its public service delivery. There are lessons that can be learnt from the digital government and the need to scan e-readiness before embarking on digital government (see figure 7). Hence, this study offers the real picture of digital government initiatives in Balochistan. While the context of Balochistan and Pakistan is unique in many ways, this study also highlights that a host of similar challenges are shared with other developing countries.

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REFERENCES

- [1] OECD. 2014. Recommendation of the Council on Digital Government Strategies. Public Governance and Territorial Development Directorate, July, 12. <https://doi.org/10.1007/s13398-014-0173-7.2>
- [2] UNCTAD 2009. Information Economy Report 2009, Trends and Outlook in Turbulent Times, United Nations publication, New York and Geneva.
- [3] IDEa Knowledge. (2005), Innovation in Public Services: Literature Review. Retrieved: October 20, 2009 from <http://www.idea.gov.uk/idk/aio/1118552>.
- [4] CDT (2002). The digital government Handbook for Developing Countries: A project of infodev and the center for Democracy & technology, The World

- Bank Group. Retrieved from <http://www.cdt.org/egov/handbook/2002-11-14egovhandbook.pdf>.
- [5] Davies, K. (2013). OECD Working Papers on International. Oecd, (22). Retrieved from www.oecd.org/daf/inv/investment-policy/working/papers.htm
- [6] Kamal, M. M. & Hackney, R. (2012). 'Inhibiting Factors for digital government Adoption: The Pakistan Context', Pacific Asia Conference on Information Systems, Hochiminh City, Vietnam.
- [7] Rehman, M., Esichaikul, V., & Kamal, M. M. (2012). Factors Influencing e-Government Adoption in Pakistan, *Transforming Government: People, Process and Policy*, 6(3), 1-18.
- [8] OECD. (2014). Recommendation of the Council on Digital Government Strategies. Public Governance and Territorial Development Directorate, July, 12. <https://doi.org/10.1007/s13398-014-0173-7.2>
- [9] OECD (2002a), The Electronic Commerce Business Impacts Project (EBIP), Paris.
- [10] UNDESA -United Nations Department of Economic and Social Affairs, E-Government Survey 2014: E-Government for the future we want. 2014, United Nations: New York.
- [11] Siddiqi, K., Baloch, G. A., & Undp, N. P. M. A. (2008). Information Technology Policy Government of Balochistan, (June), 1–27.
- [12] UNDESA - United Nations Department of Economic and Social Affairs, E-Government Survey 2010: Leveraging e-government at a time of financial and economic crisis. 2010, United Nations: New York.
- [13] UNDESA - United Nations Department of Economic and Social Affairs, E-Government Survey 2012: E-Government for the people. 2012, United Nations: New York.
- [14] UNDESA - United Nations Department of Economic and Social Affairs, E-Government Survey 2008: From e-government to connected government. 2008, United Nations: New York.
- [15] Siddiqi, K., (2008). Information Technology Policy. UNDP and Government of Balochistan, Quetta.
- [16] Featherman, M.S., Valacich, J.S., & Wells, J.D. (2006). Is that authentic or artificial? Understanding consumer perception of risk in e-service encounters. *Information Systems Journal*, 16(2), 107–134.
- [17] Miles, I. (2002). Appraisal of alternative methods and procedures for producing Regional Foresight. Paper prepared for the STRATA-ETAN High-level expert group, Mobilising the Potential Foresight Actors for and Enlarged EU.
- [18] Yin, R.K., Case study research: Design and methods. 2013: Sage publications.
- [19] Arfeen, M. I., & Khan, N. (2009). Public Sector Innovation: Case Study of e-government Projects in Pakistan. *The Pakistan Development Review*, 48(4), 439–457.
- [20] Arfeen, M. I. (2008), Government of Balochistan: Provincial and District Level e-Governance Need Assessment Report, AGRP-B, UNDP, Islamabad.
- [21] Malik, B., Mastoi, A., Gul, N., & Gul, H. (2016). Evaluating Citizen e-Satisfaction from e-Government Services: A Case of Pakistan. *European Scientific Journal*, 12(5). <http://dx.doi.org/10.19044/esj.2016.v12n5p346>
- [22] T. Division, "IT Policy and Action Plan," no. August, 2000.
- [23] I. Technology, "DIGITAL PAKISTAN Policy 2017," 2017.
- [24] Bashir, T., Khan, K., & Malik, K. (2010). The innovation landscape of Pakistan's North West Frontier Province. *Science and Public Policy*, 37(3), 181–191.
- [25] Parilli, M. D. (2007). SME Cluster Development. Basingstoke, UK: Palgrave Macmillan.
- [26] Adam, M., & Urquhart, C. (2009). No Man is an Island: Social and Human Capital in IT Capacity Building in the Maldives. *Information and Organization*, 19(1), 1–21.
- [27] Arfeen, M. I. & Kamal M. M. (2013), "eGovernance Implementation Model: Case Study of the Federal Government Agencies of Pakistan", European, Mediterranean & Middle Eastern Conference on Information Systems 2013(EMCIS2013) October 17-18 2013, Windsor, United Kingdom
- [28] Meyerhoff Nielsen, M., The Role of Governance, Cooperation, and eService Use in Current eGovernment Stage Models. 2016: Hawaii.
- [29] OECD, Recommendation of the Council on Digital Government Strategies 15 July 2014 - C(2014)88. 2014, OECD: Paris.
- [30] Davison, R.M., C. Wagner, and L.C. Ma, From government to e-government: a transition model. *Information Technology & People*, 2005. 18(3): p. 280-299.
- [31] Shareef, M.A., et al., e-Government Adoption Model (GAM): Differing service maturity levels. *Government Information Quarterly*, 2011. 28(1): p. 17-35.