Development of Electronic Government in Kazakhstan as a Tool to Combat Corruption

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Abstract

Background/Objectives: The most important functions of electronic government are improving governance, reducing bureaucracy and the risk of petty corruption. The purpose in this article is to examine what Kazakhstan has done to develop its e-government as effective tool against bureaucracy and corruption. **Methods/Statistical analysis:** This article analysis of e-government that relies on several types of resources. First of all, an articles in Western journals, reports and ratings published by international organizations such as UN and International Transparency organization, second data of Kazakhstani researches centers, analysis of e-government portal and the official state programs of Kazakhstan. An exploratory factor analysis was run for a dataset of 242 responses collected from a 17 items questionnaire. **Funding:** Tracking feedback of e-government and consumers of electronic services in the context of anti-bureaucracy and anticorruption politics is the new valuable approach in study of electronic communications in Kazakhstan. The study showed that the majority of respondents positively assess the activity of electronic government, its impact on the reduction of administrative barriers and petty corruption. As a result, an activity of e-government in Kazakhstan can be called anti-bureaucratic and anti-corruption strategy. **Improvement:** Study of activities electronic government through the prism of the bureaucracy and the petty corruption was held for the first time in Kazakhstan. Thus proposed study offers a new approach and method to the consideration of the role of e-services in the fight against administrative barriers and petty corruption in developing countries such as Kazakhstan.

Keywords: Bureaucracy, Corruption, E-government, E-Government Readiness Index, Kazakhstan, Transparency

1. Introduction

Kazakhstan is one of 15 post-Soviet countries that emerged from the collapse of the Soviet Union at the end of 1991. In many ways Kazakhstan is a stable and successful country. It ranks second in the category of middle income countries but it faces with serious challenges, one of which is corruption. In the 2014 Corruptions Perception Index (CPI), Kazakhstan ranked 126th among 174 countries. Kazakhstan has undertaken extensive initiatives to reduce corruption by introducing electronic communication. In accordance with the E-Government Readiness Index, Kazakhstan was ranked 81st in 2008, 46th in 2010, 38th in 2012 and 28th in 2014,

demonstrating intensive development of e-government. In the United Nation's E-Government Development Index, comprised of online services, telecommunications infrastructure and human capital development in equal parts, Kazakhstan rose from 38th to 28th place in the two-year period between the 2012 and 2014 reports[1]. The purpose in this article is to examine what Kazakhstan has done to develop its e-government as an effective tool against corruption.

2. Literature Review

The literature on this topic can be divided into two types: theoretical and empirical.

Table 1. E-GRI Rating among the post-Soviet countries in 2014

Position	Position	Country E-GRI
27	Russia	0.7345
28	Kazakhstan	0.6844
55	Belarus	0.6090
56	Georgia	0.5563
61	Armenia	0.4997
68	Azerbaijan	0.4984
87	Ukraine	0.5653
100	Uzbekistan	0.5099
101	Kyrgyzstan	0.4879
128	Turkmenistan	0.3813
129	Tajikistan	0.4069

Source: United Nation E-government Survey 2014[1]

Among the theoretical studies we can mention the works by Bhatnagar and Apikul,[2] Bertot, Jaeger and Grimes,[3,4] Tat-Kei Ho,[5] Kim, Jeong Kim and Lee[6], and Ionescu[7]. These investigations emphasize the positive impact of e-government in reducing corruption, which gives them the right to call e-government as an anti-corruption strategy.

Bhatnagar and Apikul[2] argue that "The use of Information and Communication Technologies (ICTs) has dramatically changed government services, business models, and people's expectations of the quality and efficiency of information sharing and service delivery". It is important to note that Bhatnagar and Apikul stress the need to integrate the work of e-government and anti-corruption programs. "Efforts to prevent corruption can be complemented with e-government strategies that review and clarify procedures and practices, and design systems that simplify, standardize and de-personalize the delivery of services… with the exception of the above and a few other examples, the potential of ICTs is not considered in many anti-corruption programs. Similarly, reducing corruption is not part of many e-government initiatives. Using e-government to fight corruption is often incidental and not part of the design objectives".

Ho[5] maintains the point of view that "The paradigm of e-government emphasizes coordinated network building, external collaboration, and one-stop customer services to facilitate efficient service delivery to citizens, and, thus, contrasts sharply with the traditional bureaucratic paradigm". Ionescu[7] emphasizes "the innovative use of information technology to prevent and control corruption in public procurement, the use of public e-procurement system for reducing the risk of corruption, and e-procurement systems as a key tool to reduce the corruption by opening competition in government procurement processes to the public".

Among empirical studies we should highlight the works by Andersen[8], Andersen, Bentzen, Dalgaard, Selaya[9], Elbahnasawy[10], Shim and Eom[11], Lio, Liu, and Ou[12].

Andersen with his co-authors[9] provides us with an empirical survey. It is noted that their results indicate that e-government exerts a considerable impact on corruption: By the most conservative estimate, an increase from the 10th percentile to the 90th percentile in the e-government distribution is associated with a movement from the 10th percentile to the 23rd percentile in the 'control of corruption' distribution. Nasr Elbahnasawy[10] argues for the need to recognize E-Government as a useful tool of anti-corruption by politicians. "This work reveals that e-government is a useful instrument in anti-corruption efforts, which needs to be recognized by policymakers".

The literature considering the developing countries and Kazakhstan includes the studies by Mahmood[13]; Schuppan[14], Bhuiyan[15] and Janenova[16].

For Kazakhstan, creation of an effective e-government is an important factor for the overall development and modernization. Bhuiyan[15] concludes "Kazakh government has moved toward e-government paradigm to ascertain a people-centered, accountable and transparent government". But he noted several problems such as digital divide, widespread corruption, lack of human resources and inadequate infrastructure development.

Among Kazakhstani studies we should mention those by Satpaev[17], Turisbekov, Dzhandosova, Tagatova and Shilikbaeva[18], Jandosova, Baitugelova, Jandosova and Kunitsa[19].

There are two successful scenarios for integration of e-government and anti-corruption initiatives. First, e-government can become one of the key components of a broader anti-corruption strategy as is demonstrated by the OPEN system established in the Seoul Municipality in the Republic of Korea. Second, service delivery improvement initiatives can be implemented in corrupt departments, specifically targeting transparency and reduced corruption as objectives. An example is the Bhoomi project in India. As suggested in[6], these countries should embed effective strategies for fighting corruption in the design of the e-government anti-corruption system, and stronger

leadership is needed in implementing such systems. These countries can also benefit from adopting what Heeks[20] calls "a more holistic vision" that takes into account not only the information system design, but also organizational and environmental factors when implementing a system for corruption control".

3. Methodology

This article is an analysis of e-government that relies on several types of resources. First of all, the articles in Western journals, reports and ratings published by the international organizations such as UN and International Transparency organization, second data of Kazakhstani research centers, analysis of e-government portal and the official state programs of Kazakhstan.

4. E-Government Readiness Index in Kazakhstan

E-Government is defined as the employment of the Internet and the world-wide-web for delivering government information and services to the citizens. E-Government Readiness Index (E-GRI) index is published by the Department of Economic and Social Affairs of the United Nations every two years. This index is a comprehensive indicator of the development of electronic communication, which consists of the results of the three sub-indices:

1. Index of electronic services development - Online Service Index (OSI)
2. Telecommunication Infrastructure Index (ITI)
3. Human Capital Index (HCI)

$$E – GRI = 1/3\ OSI + 1/3\ ITI + 1/3\ HCI$$

The first index, Online Service Index (OSI), is based on the results of a surveying the websites of the government

Table 2. Dynamics of changes in the rating on E-Government Readiness Index

Country	Rank in 2012	Rank in 2014	Progress
Kazakhstan	38	28	+10
Russia	27	27	0
Belarus	61	55	+6
Ukraine	68	87	-19

Source: United Nation E-government Survey 2014[1]

Table 3. OSI Rating among the post-Soviet countries in 2014

Country	OSI ranking
Russia	0.7087
Kazakhstan	0.7480
Belarus	0.3228
Ukraine	0.2677

Source: United Nation E- government Survey 2014[1]

Table 4. ITI among the post-Soviet countries in 2014

Country	ITI
Russia	0.6413
Belarus	0.6069
Kazakhstan	0.5749
Ukraine	0.3802

Source: United Nation E- government Survey 2014[1]

Table 5. HCI among the post-Soviet countries in 2014

Country	HCI
Belarus	0.8861
Kazakhstan	0.8619
Ukraine	0.8616
Russia	0.8388

Source: United Nation E-government Survey 2014[1]

and five ministries – finance, health, education, labor, social security and describes web presence of public authorities. Surveyed websites are evaluated in terms of content, functionality and use for the delivery of public services electronically.

The second Index – Telecommunication Infrastructure Index (ITI) is calculated on the basis of the development of electronic communications infrastructure, infrastructure capacity for e-services, including the density of mobile and fixed communications, broadband Internet subscribers per 100 inhabitants and the number of computers per 100 inhabitants.

The third index – Human Capital Index (HCI) consists of indicators of literacy, education, longevity and overall quality of life. In Kazakhstan according to the World Development Indicators the literacy rate is 99.8%. In general, according to the Internet World Stats, "Kazakhstan in 2013 ranked 11th in terms of the Internet penetration among Asian countries, with the 1st place in the Central Asia" [21,22].

UN carries out E-GRI rating every two years. In our study we conduct a comparative analysis of E-Government Readiness Index among the countries of the former Soviet Union. OSI, ITI and HCI parameters in Kazakhstan are relatively high comparatively with other post-Soviet countries. In accordance with the E-Government Readiness Index, Kazakhstan ranked 28th in 2014. For comparison, Readiness Index of E-Government ranked Kazakhstan 38th in 2012, 46th in 2010, and 81st in 2008. According to United Nations Report, in 2012 Kazakhstan was tied with Singapore on the second place in the world in terms of electronic participation. Dynamics of changes in the rating on E-Government Readiness Index (E-GRI) among the post-Soviet countries from 2012 to 2014 shows that Kazakhstan has the biggest progress (+10) compared to the other countries. Russia stayed in the same place as in 2012 year. Ukraine decreased indices on 19 positions.

Thus, the citizens of Kazakhstan are provided with ample opportunities to get public services electronically. They can get the benefits of electronic payment services such as payment of various taxes, fees and fines, as well as submission of applications and getting a variety of socially relevant permits. From the theoretical point of view, this should improve the transparency of the permit system and reduce the bureaucracy and corruption in Kazakhstan.

5. Corruption and Corruption Perceptions Index in Kazakhstan

According to the Corruption Perceptions Index (CPI) conducted by Transparency International in 2014 Kazakhstan ranked 126th among 174 countries, tied with nations such as Togo, the Gambia, and Pakistan. CPI ranges from 0 to 10, where 0 is the highest level and 10 is the lowest. Kazakhstan ranks constantly from 2 to 3. What we mean by the concept of corruption in Kazakhstan in particular? Corruption is commonly defined as the misuse of entrusted power for private gains. In Kazakhstan corruption can be described by kleptocracy (abuse of authority, manipulation of the public property in the sphere of public procurement, creating oligopolistic market); extortion (permissive and licensed spheres); cronyism (unofficial relationships or patron-customer relationships); nepotism (preference of relatives in matters of employment and promotion); lobbying of affiliated business enterprises by officials for a fee.

According to the General Prosecutor's Office of Kazakhstan the most corrupt spheres in Kazakhstan are

1. The Public procurement
2. Permissive sphere (sphere of State permits, Department of Architecture, Centers of registration estate, ministries)
3. Control and police authorities (Traffic police, military enlistment offices, Finance Police, Customs, Tax sphere, Courts).

Next level of corruption has been calculated based on measuring the proportion of consumers who have used unofficial way of solving problems.

1. Traffic Police (55%)
2. Customs (46%)
3. Sanitary inspection SES (41%).

Some social spheres, including education, kindergartens and others, also can be corrupted, due to lack of places at kindergartens, government grants in education, jobs, etc.

In the context of our study, we mostly consider the administrative corruption related to bureaucratic delays, or so-called administrative barriers that contribute to the risk of corruption. Under administrative barriers commonly understood bureaucratic or other obstacles in obtaining a public service. There is a point of view, according to which the various administrative barriers contribute to the risk of corruption. People who faced with administrative barriers try to minimize their loss of time in expectation in obtaining public services, the inconveniences associated with the collection of a set of documents, some additional documents, also the uncertainty resulting from services. For instance, Kazakhstani scientists conducted a study of administrative barriers as a source of corruption offenses in the public service in 2007 in 33 state agencies and departments in 16 major cities of Kazakhstan. Authors of this study surveyed 4,473 people who reported about 29 various forms of administrative barriers, including time consuming: lack of information, discomfort, unfriendly environment and incompetence of staff, wrongfulness. "There are two most common administrative barriers, associated with corruption – cronyism (38 %) and extortion (23 %). Overall, extortion is distributed by 17% less than the cronyism. Thus, common reasons of administrative barriers often comprised in the low quality of public services, incompetence of the staff and ill-structured organization of public services".[18]

6. How Electronic Government Can Combat Corruption in Kazakhstan?

We can answer this question by proposing the follow assumptions:

1. E-government creates electronic 'transparent communications'.
2. E-government removes officials as the mediators between citizens and the government.
3. E-government reduces discretion of officials
4. E- government can lead to the reduction in petty corruption avoiding bureaucratic administrative barriers.

Many of the elements of Kazakhstan's e-government aim at reducing corruption in the most corrupt spheres in Kazakhstan such as public procurement, licenses and permits sphere and control authorities. For example, electronic procurement website – http://goszakup.gov.kz has been implemented in the electronic format since January 1, 2010. It is enabling entrepreneurs, without leaving the office, to participate in tenders. This procedure ensures transparency of the process, creates equal conditions for competition and reduction of budget.

Electronic Licensing. The e-license portal - http://elicense.kz has 16 categories comprising hundreds of licenses and permits, including such important spheres as transportation, construction, health care, legal services, and environmental protection. By 2013, the portal had issued over 30,000 licenses of various kinds. Now E-gov.kz portal users are offered 235 interactive and transactional services.

Electronic registration of individual business was launched in 2013. E- Business registration. "Starting a business" is the first indicator in the Base of Doing Business Index from the World Bank. Usually this is an area of high level corruption. Before implementation of electronic registration to create a construction business, the applicant was required to collect 12 different documents and permits and wait for approval for 30 days or more. Now we can see the reduction of the amount of required documents to the minimum and timesaving, since electronic procedure takes 15 minutes.

Electronic service in traffic police. In 2012 in the largest cities of Kazakhstan such as Amati, Astana, Karaganda, Aktau a Specialized Electronic Center of Service was established for population registering vehicles and getting driving licenses. Using an electronic database, payment of fines over the Internet, cameras on the roads reduces the 'human factor' and risk of petty corruption. Public Service Centers are called 'single window' service where multiple social services are accessed. Starting from 2011, public service centers became part of the electronic government initiative with an emphasis on paperwork and bureaucracy reduction that significantly lowers the risk of petty corruption for getting different kinds of certifying documents and permissions. Anecdotal evidence of e-government impact on reducing corruption came from the head of Transparency International's Kazakh branch who reported that according to their surveys petty corruption in service provision had been reduced from 80% to 14%.

7. Challenges of E-Government in Kazakhstan

To enhance the role of e-government to combat corruption Kazakhstani government faces several issues such as technical problems, lack of access to the high-speed Internet, especially in rural areas, computer literacy and digital divide. Lack of computer literacy gets reflected in the lack of computer skills and distrust in electronic documents. A report to a parliamentary committee indicated that the e-government portal had 2.6 million registered users by November 2014. This number represents nearly 25% of the population over the age of 20, 56% are under the age of 34 and less than 10% are older than 44. From this, we can see that most active users are young and educated people.

Also we can note limitations of e-government effectiveness and lack of transparency. E-government can be very effective in reducing petty corruption since it lowers administrative barriers and inefficiencies of social service. But it is less effective in fighting high-level corruption in the oligopolistic society. With our point of view to enhance the role of e- government in fighting corruption the Kazakhstani government should solve the following tasks:

1. Integrate e-government applications with a system of measures to combat corruption.
2. Provide free access to public information and increase transparency in the society.
3. Popularize electronic government activities and access to the use of the government information.

4. Develop anti-corruption strategy and morality of intolerance to corruption.

5. Constantly monitor the e-government effectiveness in combatting corruption since systematic surveys of citizens will help to establish more clearly the e-government impact on corruption, as well as provide valuable feedback.

8. Empirical survey

An exploratory factor analysis was run for a dataset of 242 responses collected from a 17-item questionnaire. E Government users were mostly "males - 77.17%, the majority of which - 57,5% between the ages of 25–34; 20 % - people aged from 35 to 44 years; 7.6 % - people between 18 to 24 years, 2.3 % - people less than 18 years and only 11 % people over 45 years old. On this basis, we can conclude that primarily e-government users are young people socially active age from 25 to 44 years. The majority of respondents have university education. To question how they estimate the effectiveness of electronic government the most of respondents - 46 % evaluated it as a good, 28 % respondents marked it as sufficient and 13 % as excellent. On the question of how e-government affects to reduce administrative barriers and petty corruption, most respondents believe that e-government significantly affected the level of administrative barriers and petty corruption - 45%, 26% consider the impact of e-government as a significant, but not definitive. The question how blogs influenced the improvement of information exchange between the state and society and improving governance the majority of those surveyed also responded positive-53%. Thus, the majority of respondents noted a positive trend e- government impact of reducing petty corruption and bureaucracy in Kazakhstan.

9. Conclusion

Transparency and public control are main principles to combat corruption. Both principles incorporate efficient activity of e-government, which in the 21st century offers new mechanisms to combat corruption and bureaucracy by introducing transparent and accountable electronic communication between the citizens and the government. Considering experience of Kazakhstan as a country developing towards a new paradigm of e-government we argue that Kazakhstan has great potential to reduce the extensive petty and administrative corruption by means of

electronic communications. In one article it is impossible to cover the vast amount of material, considering the different spheres of corruption in Kazakhstan. Therefore, the task of future research is to study the impact of e-government in the areas of Kazakhstan, where corruption is particularly evident and destructive: the licensing sphere, supervisory sphere, customs, traffic police, government procurement, which we hope to do in the next article.

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