



A Study of Gap Analysis in E-Governance Services Among Citizens of Punjab

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Abstract

E-governance is a wave of innovation in the functioning of government services. It has given a push to transform a sluggish system into an efficient and citizen friendly system by using the power of Information and Communication Technology (ICT). ICT, as an important tool of e-governance has enabled citizen participation in governance through an effective interaction between the government and its people, improved effectiveness and efficiency in delivering e-services, timely disseminating information to the public. However there is a considerable gap between the expectations and perceptions of the end users regarding these services due to the delivery of service quality from the service providers' side or there may be combination of factors involved.

The objectives of this research paper are to investigate the level of quality of service provided by e-services from the customers' perspective and assessing their perceptions about these e-services of Punjab. For this, responses from 452 respondents to a SERVQUAL questionnaire from three major districts of Punjab i.e. Amritsar, Jalandhar and Ludhiana are considered for the analysis. This research also tries to ascertain the extent of discrepancy between their expectations & perceptions. It is concluded that the efforts of Government is not reaching to the public and public is being dissatisfied towards e-governance services. Unawareness about the e-services and various factors like tangibility and reliability of the services are main reasons of dissatisfaction.

Keywords: E-governance, service Quality, SERVQUAL, expectations and perceptions.

1. Introduction

Government is the backbone of any nation and caters to fulfill basic needs of the society. Its acts and plans should be transparent, efficient & easily reachable to its citizens. These acts or operations of the government are referred to as Governance. The ‘e’ in the word e-Governance means “electronic” which implies technology driven governance. E-Governance is the use of Information and Communication Technology (ICT) like the Internet, local area networks and mobiles by the government to improve effectiveness and efficiency in delivering services, guarantee quick dissemination of information. It is a socio-structural reform which constantly aims at improving productivity, efficiency of the economy and finally contributing to its overall growth.

2. Quality and E-governance Services

With the growing awareness of e-governance services, customers expect more on the quality of e-services. Public demands are high, although government is trying to keep pace in meeting their expectations, perhaps current infrastructure and processes fall short in fulfilling them. Traditionally people perceive the public services as frustrating and time consuming. The first thought that comes in anybody’s mind thinking about government services is long queues; lengthy processes and procedures. But now—a-days with the introduction of internet technology government services has developed and transformed into an e-enabled and simple, accountable, quick, responsive and transparent services. Today e-Governance is not an option, but an important tool which enables citizen’s participation in decision making and brings transparency by eliminating middlemen or agents between government and citizens. The use of technology has brought a revolution in the working style of the government. So, to compete globally it has become indispensable to measure the service quality of the e-services so that the service providers (central or state govt.) can assess their level of service quality and identify the gaps for improvements. As it is difficult to measure a public service, SERVQUAL Model is commonly used technique to measure service quality. The SERVQUAL Model begins with an assumption that service quality is critically determined by the difference between the customers’ expectations and their perceptions of the services actually delivered (Parasuramn et al. 1985). This model identifies five criterions to evaluate service quality: “RATER”

Reliability - the ability to deliver the promised service in a consistent and accurate manner.

Assurance - the knowledge level and politeness of the employees and to what extend they create trust and confidence.

Tangibles - the appearance; of e.g. the building, website, equipment, and employees.

Empathy - to what extend the employees care and give individual attention.

Responsiveness – willingness to help customers and provide speedy service.

3. Literature Review

Quality of service in the public sector is a new issue of concern. Many researchers have recognized that the key factor to the success or failure of e-government projects is the e- service quality. Many institutions assess & measure the quality of service they deliver. While reviewing existing literature we came across limited but interesting studies concerning quality for the e- services. Some are mentioned below:

J. Cox, B.G. Dale, (2001) in their paper "Service quality and e-commerce: an exploratory analysis" discussed the applicability of various factors which affect the service quality of a physical service or e-commerce. They concluded that few factors like accessibility, communication, credibility, understanding, appearance, and availability are equally applicable to e-commerce as they are in physical services. Further investigation is required to identify more factors affecting e-commerce environment.

Ray & Rao (2004) in their paper entitled, "Evaluating Government Service: A customers' Perspective of e-Government" proposed a method to assess the change in service quality in an objective manner as a result of e-Government project implementation. They proposed through their study that the analytical hierarchy approach can be used as a tool to assess e-Government induced changes in public service quality.

Faris and Vishanth, (2010) in their paper, "The Roles of Intermediaries in the Diffusion and Adoption of E-Government Services" empirically examined perceptions of using online public services through the Internet through a survey of citizens in Madinah City. The survey is complemented by a case study to identify issues that influence the progress of the Madinah local e-government project from the viewpoint of government officials responsible for managing intermediaries. They highlighted computer literacy, Internet access, trust (perceived security and privacy), and awareness in using e-services as the most salient factors currently influencing e-government diffusion and adoption in Saudi Arabia.

Malhotra, Chariar, Das (2011) in paper titled "Citizen-centricity for e-Governance initiatives in Rural Areas" focuses and discusses that E-Governance is expected to maximize citizen satisfaction by not just improving responsiveness of public service delivery mechanisms but also by increasing citizens' participation in governance mechanisms. There is a need for a design approach that is broader in perspective and not merely based on understanding of technological diffusion or acceptance parameters. It should explore the social, technical, administrative factors influencing an e-governance implementation with an objective of e- governance approach suitable to the rural citizens.

Hirmukhe J. (2012) in her paper entitled, "Measuring internal customers' perception on service quality using SERVQUAL in administrative services" tries to identify the expectations of the internal customers about the services provided by their offices and their perceptions about the same. They analyzed the responses of 33 Tehsildars to a SERVQUAL questionnaire and analyzed the gap between expectations and perceptions with an aim to provide a small contribution towards improvement in these services. They concluded that adoption of technology and changing the traditional business strategies is a need of the time. The discrepancies among the scores of

expectations & perceptions indicate that the organization should seriously consider about quality issues and measures to tackle them.

Mahalik k D. (2015) in his paper, “Measuring and making e-services of e-governance effective: a case discussion using SERVQUAL and PARETO ANALYSIS” attempted to make these services measurable and effective through factor and Preto analysis through a case discussion of Common Services Centers. He concluded by his study that various factors are responsible in making these centers successful. But focusing simultaneous on all these factors may not be always possible due to various constraints. He further mentioned that if Government can take steps to provide more no of services in CSCs centers the effectiveness of e-services can be increased.

Rocha et al. (2016) in their paper entitled,” From the quality of traditional services to the quality of local e-Government online services: A literature review” evaluated the quality of local e-Government online services. Author stated that the quality of the services should be analyzed so as to maximize and make up strategies that improve the offered services, increase satisfaction among customers.

4. Research Methodology

The researcher has used the qualitative approach to explore the behavior, expectations and experiences and feelings of people. The rationale for using a qualitative approach in this research was to explore and describe the customers’ expectations and analyzing their perception about the e-services of Punjab.

4.1 Objectives of the Study

1. To examine the awareness level of state e-governance services of Punjab.
2. To measure and analyze the gap between customers’ expectations and perceptions in major three districts (i.e. Amritsar, Jalandhar and Ludhiana) of Punjab.
3. To make suggestions on the basis of this study to increase awareness and improve quality of services.

4.2 Sampling Design

The target population for the study was any individual of age 18 years or above. The sample was chosen from major three districts viz Amritsar, Jalandhar and Ludhiana from three regions of Punjab viz. Majha, Doaba Malwa respectively. These were selected on the criteria of largest populated district in their respective regions of Punjab. Sample size was taken with 95% confidence level. This research adopted stratified random sampling for the study.

Region of Punjab	S. No.	Districts	Total population (as on census 2011)	Distributed Sample	Collected sample
Malwa	1	Ludhiana	3498739	213	200
Majha	2	Amritsar	2490656	152	140
Doaba	3	Jalandhar	2193590	135	112
TOTAL			8182985	500	452

4.3 Data Collection

To achieve the research objectives the data was collected mainly through primary sources. The literature review provided the basis for developing a questionnaire. The survey was constructed which seeks to find out the gap between Customers' expectations and perception of the state e-governance services using SERVQUAL dimensions and explain the relationship among variables being used. A self-designed SERVQUAL questionnaire based on seven point Likert scale were distributed to 500 individuals, of which, 452 were retained which were complete in every sense. 48 respondents turned to be incomplete and so the number was deleted from the survey.

4.4 Research Tools

The Descriptive Statistics is used i.e. mean, standard deviation to examine the awareness level of the citizens of the state. Frequency statistics are used to calculate the gap score of expectations & perceptions of the respondents. Reliability analysis was done to check the

4.5 Hypothesis

H1 Expectations & perception of the customers with respect to tangibility is not significant.

H2 Expectations & perception of the customers with respect to reliability is not significant.

H3 Expectations & perception of the customers with respect to responsiveness is not significant.

H4 Expectations & perception of the customers with respect to assurance is not significant.

H5 Expectations & perception of the customers with respect to empathy is not significant.

4.6 Limitation of the Study

- As the responses were collected from urban areas, the respondents of rural areas might have different opinions.
- Sometimes respondents might give socially desirable response or in influence of the other.
- Respondents might respond in influence of the perceptions of their family members.
- Sometimes lack of knowledge due to lower level of education becomes a constraint for obtaining appropriate response.

5. Data Analysis

5.1 Demographic Profile

In total, a sample of 452 respondents from major three districts of Punjab participated in the survey. Details of the respondents profile are provided in table 5.1.1 below:

Table 5.1.1

Demographic characteristics		Frequency	%age
Gender	Male	192	42.5
	Female	260	57.5
Age (in years)	18- 30	285	63.1
	31-50	152	33.6
	51 & above	15	3.3
Level of Education	up to Secondary (+2)	67	14.8
	Up to Graduation	199	44
	Post Grad. & Above	186	41.2
Occupation	Student /Not Working	187	41.4
	Serviceman	95	21
	Professional	136	30.1
	Businessman	34	7.5
Monthly Income (Rs.)	Up to Rs. 25,000	242	53.5
	Rs. 25,000 - Rs. 75,000	137	30.3
	Rs. 75, 000 and Above	73	16.2

The analysis reveals that majority of respondents belongs 18- 30 years of age group, followed by the age group of 31-50 (33%) and 51 and above (3.3%). The female composition (57%) of respondents is more than the males (42%). The researcher also attempted to examine the literacy by determining the qualification possessed by the respondents. It revealed that 14% of the respondents possessed Secondary certificate, while, 44% were undergraduate and 41% were post graduate. Similarly, the monthly income was expedited, which showed 53% of respondents fall in the category of Up to Rs. 25,000, 30% fall in the range of Rs. 25,000- Rs. 75,000 and 16% belong to the category of Rs. 75,000 and above. This depicts that majority of literate section of society is age group 18- 30 years, having moderate income are more inclined towards the e-governance practices.

5.2 Awareness Level of E-services

A total of 13 different state e-governance services provided by Government of Punjab have been examined as depicted in table below. It has been tried to explore the awareness level of the respondents about these e-governance services provided by the state government. It has been found that the majority of respondents are aware about services like SUWIDHA, UID/Adhaar, School Education, Technical Education, Election, Police dial-100 etc. The mean in almost all of the services is less than 1 which signifies that the respondents are unaware about the services. However, there are certain services for which the awareness level is very low like National annual

disease Reporting System, NPR (National Population Register) and Social Security etc. as depicted in table 5.2.1.

Table 5.2.1: Awareness Level of E-services

Services Aailed	N		Mean	Std. Dev.	Frequency			
	Valid	Missing			Yes	%age	No	%age
SUWIDHA	452	0	0.84	0.36	381	84.3	71	15.7
UID (Unique Identity)/Adhaar	452	0	0.86	0.33	393	86.9	59	13.1
NPR (National Population Register)	452	0	0.31	0.46	144	31.9	308	68.1
School Education	452	0	0.68	0.46	309	68.4	143	31.6
Registration of property Document	452	0	0.43	0.49	198	43.8	254	56.2
Minority Welfare Scholarship	452	0	0.52	0.49	237	52.4	215	47.6
Social Security	452	0	0.35	0.47	160	35.4	292	64.6
Higher education	452	0	0.60	0.48	274	60.6	178	39.4
Technical education	452	0	0.60	0.48	274	60.6	178	39.4
Election	452	0	0.66	0.47	299	66.2	153	33.8
Police Dial-100	452	0	0.72	0.44	328	72.6	124	27.4
Medical Education	452	0	0.49	0.50	223	49.3	229	50.7
National annual disease Reporting System	452	0	0.16	0.40	70	15.5	382	84.5

Source: Data Complied through Questionnaire

5.3 Gap Analysis

The main objective of this research paper is to assess the quality of e-services provided by Government of Punjab with the help of SERVQUAL scales. The expectations and perceptions of the respondents which they had and which they perceived after availing the e-governance services were rated on the rating scale of 1-7 (where 1 denotes strongly disagree and 7 denotes strongly agree). After calculating the scores the gaps were found out by subtracting expectation scores from perception scores.

To test the scale consistency, Cronbach's Alpha (α) was used. The values of alpha above 0.68 are regarded acceptable (Hair et. Al 2006).

5.3.1 Reliability Analysis

Dimensions	No. of Statements	Valid responses	Cronbach's Alpha (Expectations)	Cronbach's Alpha (Perceptions)
Tangibles	4	452	.855	.828
Reliability	5	452	.861	.877
Responsiveness	4	452	.873	.861
Assurance	4	452	.874	.864
Empathy	5	452	.912	.884

Source: Data Complied through Questionnaire

As depicted in table 5.3.1 the value of Cronbach alpha is more than 0.68 for each dimension in case of both expectations and perceptions, which suggest all items, are internally reliable.

5.3.2 Descriptive Statistics (Expectations)

Dimensions	Statement	Valid Responses		Mean	Std. Deviation	Chi Square	Sig.
		Valid	Missing				
Tangibles	1	452	0	5.53	1.254	320.726	.000
	2	452	0	5.66	1.260	357.584	.000
	3	452	0	5.72	1.340	280.584	.000
	4	452	0	5.85	1.310	459.765	.000
Reliability	5	452	0	5.80	1.213	455.739	.000
	6	452	0	6.00	1.152	550.982	.000
	7	452	0	5.82	1.217	300.469	.000
	8	452	0	5.86	1.263	470.296	.000
	9	452	0	5.81	1.266	444.372	.000
Responsiveness	10	452	0	5.95	1.194	495.69	.000
	11	452	0	5.83	1.155	312.33	.000
	12	452	0	5.92	1.174	559.934	.000
	13	452	0	5.90	1.322	480.920	.000
Assurance	14	452	0	5.86	1.199	503.004	.000
	15	452	0	5.89	1.193	456.761	.000
	16	452	0	5.76	1.226	396.332	.000
	17	452	0	5.99	1.186	531.190	.000
Empathy	18	452	0	5.89	1.236	469.677	.000
	19	452	0	5.82	1.120	364.027	.000
	20	452	0	5.80	1.138	438.084	.000
	21	452	0	5.84	1.212	426.841	.000
	22	452	0	5.89	1.236	358.903	.000

Source: Data Compiled through Questionnaire

Table 5.3.2 depicts the mean and standard deviation of various dimensions of tangibility, reliability, responsiveness, assurance and empathy for expectations of the respondents. The mean value in all dimensions is above 5 which is more than the standard mean score (4) which state that expectations of the respondents from the e-governance services is high. Chi square values for all the statements were calculated at significance level of .000 and written against it in the tables and which lies within the limits.

5.3.3 Descriptive Statistics (Perceptions)

Dimensions	Statement	Valid Responses		Mean	Std. Deviation	Chi Square	Sig.
		Valid	Missing				
Tangibles	1	452	0	4.21	1.475	163.442	.000
	2	452	0	3.84	1.371	190.792	.000
	3	452	0	4.23	1.596	99.575	.000
	4	452	0	4.07	1.418	166.230	.000
Reliability	5	452	0	3.77	1.507	147.027	.000
	6	452	0	3.83	1.516	126.522	.000
	7	452	0	3.84	1.433	181.655	.000
	8	452	0	3.73	1.419	175.088	.000
	9	452	0	4.18	1.492	163.102	.000
Responsiveness	10	452	0	4.09	1.398	200.858	.000
	11	452	0	4.00	1.529	118.531	.000
	12	452	0	4.09	1.444	180.230	.000
	13	452	0	3.81	1.478	155.482	.000
Assurance	14	452	0	3.96	1.426	166.168	.000
	15	452	0	4.20	1.332	251.996	.000
	16	452	0	4.07	1.460	153.779	.000
	17	452	0	4.13	1.379	207.270	.000
Empathy	18	452	0	4.07	1.428	167.531	.000
	19	452	0	4.13	1.394	236.478	.000
	20	452	0	4.19	1.495	138.664	.000
	21	452	0	4.07	1.490	156.040	.000
	22	452	0	4.08	1.564	110.912	.000

Source: Data Compiled through Questionnaire

Descriptive Statistics

Table 5.3.3 depicts the mean and standard deviation of various dimensions of tangibility, reliability, responsiveness, assurance and empathy for perceptions of the respondents. The mean value in reliability is nearly 3 which is less than the standard mean score 4 than tangibility, responsiveness, assurance and empathy. It states that the respondents feel less reliable. Chi square values for all the statements were calculated at significance level of .000 and written against it in the tables and which lies within the limits.

From tables 5.3.2 and 5.3.2, chi square values depict that the opinions of respondents with respect to all the dimensions are significant, hence rejecting the null hypothesis.

5.3.4 Gap Analysis

Dimensions	Statement	Expectation Score	Perception Score	Gap Score	Average for Dimension
Tangibles	1	5.53	4.21	-1.32	
	2	5.66	3.84	-1.82	
	3	5.72	4.23	-1.48	
	4	5.85	4.07	-1.77	
		5.69	4.09		-1.60
Reliability	5	5.80	3.77	-2.03	
	6	6.00	3.83	-2.17	
	7	5.82	3.84	-1.97	
	8	5.86	3.73	-2.12	
	9	5.81	4.18	-1.62	
		5.86	3.87		-1.98
Responsiveness	10	5.95	4.09	-1.85	
	11	5.83	4.00	-1.83	
	12	5.92	4.09	-1.83	
	13	5.90	3.81	-2.08	
		5.90	4.00		-1.90
Assurance	14	5.86	3.96	-1.90	
	15	5.89	4.20	-1.68	
	16	5.76	4.07	-1.69	
	17	5.99	4.13	-1.85	
		5.88	4.09		-1.78
Empathy	18	5.89	4.07	-1.81	
	19	5.82	4.13	-1.69	
	20	5.80	4.19	-1.61	
	21	5.84	4.07	-1.77	
	22	5.91	4.08	-1.82	
		5.85	4.11		-1.74
Average SERVQUAL Score:		5.84	4.03		-1.80

Source: Data Compiled through Questionnaire

Tangibles

Tangibles consist of those things that a customer can see or touch (Kurtz and Clow, 1998). Acc. to analysis for this dimension the customers had high expectations score of 5.69 regarding tangibles but the perception score came out to be lower which was 4.09, hence a quality gap came out to be -1.60. This means that customers' perceptions regarding tangibles in e-governance services were lower than what they expected. This dimension had the highest quality gap score.

Reliability

Reliability is the consistency of performance and the dependability of an organization's performance (Klefsjo and Bergman, 1994). As depicted in table 5.3.4 the analysis, customers had high expectations score of 5.86 regarding reliability but the perception score came out to be lower which was 3.87, hence a gap score came out to be -1.98. This means that customers' perceptions regarding reliability in e-governance services were lower than what they expected.

Responsiveness

Responsiveness is the willingness and quickness of employees to help customers and provide prompt service; (Klefsjo and Bergman, 1994). As depicted in table 5.3.4 above the results in this dimension revealed that customers had high expectations score of 5.90 regarding responsiveness but the perception score came out to be lower which was 4.00, hence a quality gap came out to be -1.90. This means that customers' perceptions regarding responsiveness in e-governance services were lower than what they expected.

Assurance

Assurance is the knowledge and courtesy of employees and their ability to convey trust and confidence (Klefsjo and Bergman, 1994). As depicted in table 5.3.4 above the results in this dimension revealed that customers had high expectations score of 5.88 regarding assurance but the perception score came out to be lower which was 4.09, hence a gap score came out to be -1.78. This means that customers' perceptions regarding assurance in e-governance services were lower than what they expected.

Empathy

Empathy refers to caring, individualized attention given to customers by the company (Zeithaml and Bitner, 2003). As depicted in table 5.3.4 above the results in this dimension revealed that customers had high expectations score of 5.85 regarding empathy but the perception score came out to be lower which was 4.11, hence a quality gap came out to be -1.74. This means that customers' perceptions regarding empathy in e-governance services were lower than what they expected.

Thus, from the table 5.3.4, all the dimensions of quality revealed that the scores of respondent's expectations and perceptions were 5.84 and 4.03 respectively, which has resulted in a quality gap score of -1.80. Therefore it can be concluded that the respondent did not derive the quality which they expected from e-services.

6. Conclusion

After the data analysis & interpretation, in totality, it can be concluded that the customers' are not satisfied with the quality of the e-governance services provided to them. Customers are dissatisfied with the tangibility attributes meaning the customers are mainly dissatisfied with the outward aspect & physical facilities offered and communication material provided to them for their information. On the other hand, lower gaps have been observed for Empathy which would imply that employees don't even try to understand the customers' needs and wants. They don't give them access of approachability and ease of contact. It should however not be ignored that a negative gap has been obtained for all the 5 dimensions.

It was seen that the efforts of Government is not reaching to the public and public is being dissatisfied towards e-governance services. Only few respondents agreed on meeting the public/customers' expectations in terms of awareness, reliability tangibility and on being empathetic.

The results of the study call attention to the government in identifying cost-effective ways of closing service quality gaps in order to keep pace with the growing challenges in outer world and they should understand that there are lot of improvements required to be made. Unawareness among the citizens is a big loophole which is to be covered so as to make e-governance a successful endeavour.

7. Suggestions

There are few ways to improve service quality. They are:

1. Introducing complaint handling system so that customers should feel more connected.
2. Organizing awareness camps in rural as well as urban areas to create the awareness among people regarding the usage and benefits of these services.
3. Making frequent surveys to know about the customers' perceptions and expectations.
4. Putting more emphasizes on educating rural masses. They should be made e-literate for e-governance to flourish.
5. The equipments used should be up-to-date.
6. For the successful implementation of the e-governance services the technological infrastructure should be strong enough to support at the digital demands. It includes building technical Hardware and Software infrastructure which means better and faster connectivity options.

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