Impact analysis of Corporeal Aspects on Service Delivery:
A Citizens Perspective on Basic Amenities at SEWA centres

J.S. Pasricha
Professor
Punjabi University, Patiala

Jasmeen Kaur
Research Scholar
Punjabi University, Patiala.

Abstract

For decades the governments are focusing on empowering governance systems and making them digitally sound. The efforts are visible from the computerisation of government departments to the use of ICT tools in improving the processes of government departments. The main focus of ICT enabled government also known as e-Governance is to provide services to citizens in a more efficient way in terms of comfort, lower costs, lesser time, minimum paperwork, and accessibility. Following these footsteps, the government of Punjab has also opened various customer service centres i.e. SEWA centres under e-Governance initiatives. In this paper, an attempt is made to analyse the opinion of customers regarding the presence of basic amenities at SEWA centres. This paper is based on primary data collected from 375 customers of SEWA centres belonging to five districts of Punjab. Data is analyzed with the help of Factor analysis, Kruskal Wallis test and Mann Whitney test.

Keywords: *Customers, SEWA Centres, Service delivery, Physical aspects*

Introduction

Customer service centres are a boon in the Indian public service delivery mechanism. These centres have provided an alternate system to the common man from harassment of the traditional bureaucratic system which was filled with red-tapism, corruption and undue delays etc. These, SEWA centres are providing various day to day public services under one roof to the thousands of citizens in Punjab every day. There are approx. 500 SEWA centres in Punjab are serving the citizens and providing them with basic services. They are designed to deliver comfortable, stress-free, transparent and efficient services at the convenience of the citizens i.e. delivering good governance with the help of technology. The main agenda is to provide easy access to the citizen-centric services related to various Punjab government departments at the doorsteps of the citizens under one roof. There are three modes of service delivery in Punjab i.e. SEWA centres, e-SEWA app and website of SEWA centres. Citizens being the ultimate end-users visit SEWA centres for availing of various services every day and experiencing the ground realities. This generates the need for citizen-friendly centres. Thus, the availability of basic amenities is a very important prerequisite to make these centres citizen-friendly. The basic physical amenities not only helps in making the delivery of services hassle-free but also helps in creating a long-lasting impression on customers mind. As a result, there is a need to access the opinion of customers regarding various services being delivered at SEWA centres.

Literature Review

The purpose to review the earlier work done and existing theories are to establish the basis for this study. According to **Muzammil (2000)** implementation of information technology in various sectors has resulted in better administration which ultimately helped in accelerating economic growth and development. **Dey (2000)** highlighted three important sources i.e. men, machinery, and methods for achieving the goal of good governance through e-Governance. **Yadav (2009)** found that the e-Governance was not just computerization of back end office operations but altogether a change in the mindset of all stakeholders without compromising on the objective of good governance with help of ICT. **Madon (2004)** found that the FRIENDS project is succeeded in reducing the level of corruption, improving the quality of life of people and providing middleman free services to the citizens. **Jho (2005)** highlighted the gap between technical and social standards as the main cause of the conflict between the Korean Government and civil society and described these gaps as a potential danger for forthcoming e-Governance initiatives. **Gilmore and D'Souza (2006)** suggested that there must be an increase in competition level among the service providers via an increasing number of the service providers as it will not only improve the quality of e-Services but also its accessibility. **Chakravarti & Venugopal (2008)** found that the government has gained citizen confidence by providing them with a single accessibility point for availing all services through portals. **Jain and Jain (2009)** emphasized that the 'e-Soochna and RTI centre in Kullu district of H.P had created an environment that was hassle-free, transparent, cost and time-effective, and also provides easy access to important information and e-Services to citizens. **Malhotra and Krishnaswamy (2011)** found that several factors, such as poor physical infrastructure, lack of awareness, lack of relevant content and services, poor electricity supply, and bad internet connectivity as the major issues in the implementation of ICT initiatives. **Inampudi (2013)** found CFST and KAVERI projects have transformed the traditional ways of administration and succeeded in providing various benefits of good governance. **Soni (2013)** revealed e-Governance projects i.e. Gyandoot, Bhoomi, and Sari have improved the quality of government service delivery by providing hassle-free, cost-effective, transparent, time-bound, and corruption-free services to the people. **Natesh (2017)** revealed that the level of awareness among the rural citizens regarding this centre was very low and access to government services was available only at taluk headquarters. He concluded that the prevailing model of government service delivery has failed in fulfilling the needs and expectations of rural citizens. The existing literature mainly focused on the positive impact of e-Governance on quality of service as well as on traditional ways of administration and factors that causes failure of e-Governance projects. However, no study has been conducted related to the availability of basic amenities at SEWA centres an e-Governance initiative by the Government of Punjab and its impact on service delivery from a citizens perspective. Thus, there exists a research gap in the areas of study selected by the researcher.

Research Objective

The paper aims to know the opinion of the customers' regarding the physical aspects of service delivery provided at SEWA Centres.

Research Methodology

This paper is based on a descriptive study that is collected through an extensive field survey. Primary data has been collected through structured questionnaire and personal discussions. The researcher has selected 375 customers from five districts of Punjab including Amritsar, Jalandhar, Ferozpur, Ludhiana and Patiala selected based on the regional distribution of Punjab. From each district, seventy-five customers have been inquired. Factor analysis, Kruskal Wallis test and Mann Whitney test has been used for analysis purpose. Convenience sampling techniques are used to collect the data.

Results and Discussions

The main objective of this research paper is to seek the opinion of customers regarding the Physical aspects at SEWA centres which include ventilation and lighting systems, display of a list of services, equipments related to technology, form filling platforms, adequate computerized call back system, good drinking water facility, availability of clean washrooms, adequate parking space, and sitting and waiting arrangements. Opinion of customers has been taken on a five-point Likert scale ranging from strongly agree to strongly disagree.

Factor Analysis

Factor analysis has been applied to group the statements into relevant factors that make the analysis more interpretative. A Principal Component Analysis (PCA) with orthogonal rotation called varimax rotation has been applied to the ten opinion statements. Firstly, the *Kaiser-Meyer-Olkin* (KMO) measure of sampling adequacy test has been applied to check the adequacy of the sample as depicted in Table 1.

Table 1
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.791
Bartlett's Test of Sphericity	Approx. Chi-Square	914.873
	Df	45
	Sig.	0.000

Table 1 shows KMO value = 0.791 which is higher than the minimum acceptable value i.e. more than 0.5 (*Field, 2009*). Bartlett's test of Sphericity is used to check the correlation between the statements required to run the Factor Analysis. Bartlett's test of Sphericity χ^2 (45) is 914.873 which is highly significant at one per cent level of significance (p = 0). This means that there is enough correlation between statements to run factor analysis. Thereafter, to check the reliability of the factors the Cronbach's Alpha test of measuring reliability is applied as shown in table 2

Table 2
Reliability Statistics

Factor	Cronbach's Alpha	N of Items
F1	0.78	6
F2	0.68	2
F3	0.53	2
Total	**0.78**	**10**

Table 2 shows the value of Cronbach's Alpha of three factors consisting of ten items which depict good reliability of the data. Therefore, all the conditions have been satisfied to run factor analysis.

Assigning Names to the Extracted Factors

Table 3 displays the results of Principal Component Analysis which extracted three factors based on Kaiser's (1960) criterion and all the factors have an Eigen value exceeding one as shown in table 5.13. These three factors explain in combination 57.86 per cent of the total variance which is quite good. More than 50 per cent of variance explained by the statements is enough *(Nunnally and Bernstein, 1994)*. The value of Factor loading of all the statements is more than 0.4 which is also appropriate *(Field, 2009)*. Therefore, all the ten statements are made part of the final analysis and three extracted factors have been named on common themes based on the judgement of the researcher.

Table 3
Factor Loadings, Variance Explained and Eigen Values

St. No.	Statement	Factor Loading	Eigen Value	Percentage of Variance explained	Cumulative percentage of variance
Factor I: Appearances and tangibles					
S7	Proper ventilation and lighting systems	0.809			
S8	Proper display of a list of services	0.730			
S9	Modern looking equipment and technology	0.688			
S6	Sufficient number of counters for providing services	0.676	2.775	27.748	27.748
S5	Sufficient platforms for filling-up of forms	0.552			
S10	An adequate system of computerised call back (IVRS) system for handling citizen's queries	0.521			
Factor 2: Hygiene					
S3	Good drinking water facility/ Water cooler	0.846	1.742	17.418	45.166
S4	Availability of clean washrooms	0.789			
Factor 3: Physical Ease and Comfort					
S1	Adequate space for parking	0.883	1.269	12.691	57.857
S2	Adequate arrangement for sitting and waiting	0.605			

Three extracted factors have been named as Appearances and Tangibles, Hygiene, and Physical Ease and Comfort. A brief explanation of these factors is given below:

Factor 1 - Appearances and Tangibles: It is the most important factor as it explains 27.75 per cent of the total variance and has an Eigen value of 2.775. Six Statements related to Appearances and Tangibles representing physical facilities are included in this factor. Proper ventilation and lighting system is the most important statement with the highest factor loading of 0.809 followed by a proper display of a list of services (0.730). Thus, customers' opinion regarding Appearances and Tangibles is important to analyse as it depicts the availability of physical necessities, such as counters, display of available services, form filling platforms and appropriate types of equipment etc. at the SEWA centres which subsequently affects the efficiency of service delivery.

Factor 2 – Hygiene: This is the second important factor that represents basic amenities and consists of two statements good drinking water facility/ water cooler and availability of clean washroom having factor loadings of 0.846 and 0.789 respectively. The factor has a 1.742 Eigen value and explains 17.42 per cent of the total variances. Thus, the basic amenities and the pleasant ambience reflecting hygiene aspects too is very important to be analysed along with the main objective of SEWA centres is to provide hassle-free services under one roof.

Factor 3 - Physical Ease and Comfort: This factor accounts for 12.69 per cent of the total variance and has an Eigen value of 1.269. This factor also contains two statements related to the physical ease and comfort of

SEWA Centres. The factor loadings of these two statements are 0.883 and 0.605. Thus, the physical ease and comfort in terms of adequate sitting arrangements for the customers waiting for the services and adequate parking space at the centre nourish the service delivery system by providing stress-free services.

1.1 Analysis of customers' opinion regarding Appearances and Tangibles with reference to Socio-Economic Profile of the Customers

H_01: *There exists no significant difference in the opinion of customers across various districts regarding appearances and tangibles related to SEWA Centres.*

H_02: *There exists no significant difference in the opinion of customers across various income groups regarding appearances and tangibles related to SEWA Centres.*

H_03: *There exists no significant difference in the opinion of customers across various occupational groups regarding appearances and tangibles related to SEWA Centres.*

H_04: *There exists no significant difference in the opinion of male and female customers regarding appearances and tangibles related to SEWA Centres.*

H_05: *There exists no significant difference in the opinion of rural and urban customers regarding appearances and tangibles related to SEWA Centres.*

Table 4
Kruskal-Wallis Results for Customers' Opinion regarding Appearances and Tangibles

Dependent Variable	Independent Variables		N	Mean	Mean Ranks	H-Value	df	p-value
Appearances and Tangibles	District	Amritsar	75	3.05	187.69	27.22	4	0**
		Ludhiana	75	3.22	211.53			
		Patiala	75	2.75	148.65			
		Jalandhar	75	3.34	227.79			
		Ferozpur	75	2.83	164.33			
	Income	Up to Rs. 2,50,000	254	3.08	192.51	3.191	2	0.20
		Rs. 250,000 - 5,00,000	93	2.91	171.25			
		Above Rs. 5,00,000	28	3.12	202.73			
	Occupation	Self employed	93	2.82	159.22	9.453	2	0**
		Employed	155	3.15	202.37			
		Others	127	3.06	191.54			

Note: **Statistically significant at 1 per cent level.

Table 5
Mann-Whitney Results for Customers' Opinion regarding Appearances and Tangibles

Dependent Variable	Independent Variables		N	Mean	Mean Ranks	Sum of Ranks	U- Value	Z- Value	p-value
Appearances and Tangibles	Gender	Male	297	3.04	187.69	55744	11491	-0.108	0.91
		Female	78	3.06	189.18	14756			
	Residence	Rural	145	2.93	174.17	25255	14670	-1.970	0.05*
		Urban	230	3.11	196.72	45245			

Note: *Statistically significant at 5 per cent level.

Table 4 presents that the Customers of Jalandhar district have a positive opinion regarding appearances and tangibles related to SEWA Centres with higher mean score (3.34) in comparison to the customers in Ludhiana district (3.22), Amritsar district (3.05), and Ferozpur district (2.83) SEWA centres are neither agreed nor disagreed with the factor while the customers of Patiala (2.75) district SEWA centres have disagreed about the same. On the other hand, customers across all income groups neither agree nor disagree with adequate availability of appearances and tangibles related to SEWA centres as the mean score of all the groups ranges between 2.91 to 3.12. However, the mean score of self-employed customers (2.82) is less than the mean score

of others (3.06) and employed (3.15) groups in the occupation category. Thus, it reflects the self-employed customers are more concerned about adequate availability of appearance and tangibles related to SEWA centres among occupational groups.

The Kruskal-Wallis test shows that the opinion of the customers significantly differs across various groups of district category and occupation category regarding appearances and tangibles related to SEWA Centres at one per cent level of significance as these categories have H-value equal to 27.22 and 9.453 respectively. On the other hand, H-statistics has been found insignificant in the case of income category as the p-value is 0.2 which is greater than 0.05.

Table 5 shows that both male and female customers are indifferent about the underlying statement as their mean score is 3.04 and 3.11 respectively. On the other hand, a relatively higher mean score of urban customers (3.11) reflects their higher attraction towards appearances and tangible related to SEWA centre as compared to the rural customers (2.93). The Mann-Whitney test also proves that the opinion of the rural and urban customers regarding appearances and tangibles related to SEWA centres significantly differs from each other (Z-value = -1.970 with p-value .05= .05). On the other hand, the Z value has been found insignificant in the case of gender category as the p-value is 0.91 which is greater than 0.05. Thus, the overall analysis shows that customers from Jalandhar district, employed customers, and urban customers are found more concerned regarding appearance and tangibles related to SEWA centres, leading to the non-acceptance of null hypotheses H_01, H_03 at one per cent of level and H_05 at five per cent level of significance. On the other hand, the customers belonging to different income groups and gender groups have an almost similar opinion regarding the factor of appearances and tangibles at SEWA Centres and thus, the null hypotheses H_02 and H_04 are accepted.

The results depict the lack of two important Appearances and Tangibles affecting the service delivery of SEWA centres. First is lack of display of a list of services as well as the requirements which force them to ask the employees or other people for the same. Second is a shortage of platforms for filling up their forms as they have to use walls and chairs as their writing platforms, else they have to wait for the platforms to get vacated.

1.2 Analysis of customers' opinion regarding Hygiene with reference to Socio-Economic Profile of the Customers

H_01: There exists no significant difference in the opinion of customers across various districts regarding hygiene conditions at SEWA Centres.

H_02: There exists no significant difference in the opinion of customers across various income groups regarding hygiene conditions at SEWA Centres.

H_03: There exists no significant difference in the opinion of customers across various occupational groups regarding hygiene conditions at SEWA Centres.

H_04: There exists no significant difference in the opinion of male and female customers regarding hygiene conditions at SEWA Centres.

H_05: There exists no significant difference in the opinion of rural and urban customers regarding hygiene conditions at SEWA Centres.

Table 6
Kruskal-Wallis Results for Customers' Opinion regarding Hygiene

Dependent Variable	Independent Variables		N	Mean	Mean Ranks	H-Value	df	p-value
Hygiene	District	Amritsar	75	1.91	184.08	22.16	4	0**
		Ludhiana	75	2.29	237.19			
		Patiala	75	1.73	168.07			
		Jalandhar	75	1.84	178.91			
		Ferozpur	75	1.78	171.75			
	Income	Up to Rs. 2,50,000	254	1.91	186.88	0.83	2	0.66
		Rs. 250,000 - 5,00,000	93	1.95	194.8			
		Above Rs. 5,00,000	28	1.77	175.54			
	Occupation	Self employed	93	1.91	184.92	1.40	2	0.49
		Employed	155	1.95	195.37			
		Others	127	1.85	181.25			

Note: **Statistically significant at 1 per cent level.

Table 7
Mann-Whitney Results for Customers' Opinion regarding Hygiene

Dependent Variable	Independent Variables		N	Mean	Mean Ranks	Sum of Ranks	U-Value	Z-Value	p-value
Hygiene	Gender	Male	297	1.92	188.47	55974.5	11444.5	-0.17	0.86
		Female	78	1.87	186.22	14525.5			
	Residence	Rural	145	1.96	194.28	28170	15765	-0.93	0.35
		Urban	230	1.87	184.04	42330			

Table 6 shows that the mean scores of customers present at Patiala SEWA centre (1.73) and Ferozpur SEWA centres (1.78) are relatively lower than the mean score of districts Jalandhar (1.84), Amritsar (1.91), and Ludhiana (2.29) SEWA centres which show their concern more towards the hygiene conditions at SEWA centres. However, customers as per various income and occupation groups have rated hygiene conditions of SEWA centres on the lower side of the scale. The mean score of both these categories is ranging between 1.77 to 1.95 indicating towards non-availability of hygienic conditions at SEWA centres.

The Kruskal-Wallis test also conveys a significant H-value (22.16) in context to the district category which signifies that the opinion of the surveyed customers across different district groups significantly vary from one another. Thus, the null hypothesis H_01 is not accepted at a one per cent level of significance as the p-value is .00<.01. On the other hand, non-significant H-values are found in respect of Income category (.83) and Occupation category (1.40) which lead to acceptance of null hypotheses H_02 and H_03.

Table 7 highlights that both male (1.92) and female (1.87) customers have shown their dissatisfaction with the hygiene factor of SEWA Centres. Similarly, rural (1.96) and urban (1.87) customers are also dissatisfied with the same. The Mann-Whitney test also depicts non-significant value in both categories i.e. Z-value = -0.17 with p-value .86>.05 for gender category and Z value = -0.93 with p-value 0.35 >0.05 for residence category which leads to acceptance of the null hypotheses H_04 and H_05 even at five per cent level of significance.

Overall, most of the customers have mentioned that there is no water facility at some SEWA centres and if it is available at some centres, it's not clean or potable. They stressed the fact that especially in summers and on heavy rush days, they have to buy water from nearby shops. Some customers have also stated that there is no washroom facility while some others mentioned that washrooms are available at some centres but they are not clean enough and are unhygienic. Thus, results reflect that the customers are not satisfied with the hygiene factor of SEWA centres

1.3 Analysis of Customers' opinion regarding Physical Ease and Comfort with reference to Socio-Economic Profile of the Customers

H_01: *There exists no significant difference in the opinion of customers across various districts regarding Physical Ease and Comfort related to SEWA Centres.*

H_02: *There exists no significant difference in the opinion of customers across various income groups regarding Physical Ease and Comfort related to SEWA Centres.*

H_03: *There exists no significant difference in the opinion of customers across various occupational groups regarding Physical Ease and Comfort related to SEWA Centres.*

H_04: *There exists no significant difference in the opinion of male and female customers regarding Physical Ease and Comfort related to SEWA Centres.*

H_05: *There exists no significant difference in the opinion of rural and urban customers regarding Physical Ease and Comfort related to SEWA Centres.*

Table 8
Kruskal-Wallis Results for Customers' Opinion regarding Physical Ease and Comfort

Dependent Variable	Independent Variables		N	Mean	Mean Ranks	H-Value	df	p-value
Physical Ease and Comfort	District	Amritsar	75	2.60	127.33	41.12	4	0**
		Ludhiana	75	3.80	220.08			
		Patiala	75	3.40	188.21			
		Jalandhar	75	3.69	213.93			
		Ferozpur	75	3.42	190.45			
	Income	Up to Rs. 2,50,000	254	3.26	177.37	9.88	2	0**
		Rs. 250,000 - 5,00,000	93	3.59	205.83			
		Above Rs. 5,00,000	28	3.82	225.23			
	Occupation	Self employed	93	3.45	195.18	2.98	2	0.22
		Employed	155	3.45	193.79			
		Others	127	3.26	175.67			

Note: **Statistically significant at 1 per cent level.

Table 9
Mann-Whitney Results for Customers' Opinion regarding Physical Ease and Comfort

Dependent Variable	Independent Variables		N	Mean	Mean Ranks	Sum of Ranks	U- Value	Z- Value	p-value
Physical Ease and Comfort	Gender	Male	297	3.42	192.56	57191	10228	-1.74	0.08
		Female	78	3.23	170.63	13309			
	Residence	Rural	145	3.45	194.19	28157.5	15777.5	-0.96	0.34
		Urban	230	3.34	184.1	42342.5			

Table 8 shows that customers belonging to different districts have opined that SEWA Centres provide physical ease and comfort to them except for the customers of Amritsar SEWA centres who disagree with the underlying factor (2.60) indicating inadequate parking and sitting arrangements at Amritsar district SEWA centres. Similarly, a difference of opinion has been found among the customers based on income category, as low-income customers having income up to Rs. 2,50,000 (3.26) consider the physical ease and comfort of SEWA Centres as normal in opposition to the higher income group who think that physical ease and comfort are sufficient. On the other hand, the mean score of self-employed and employed customers (3.45 each) are moderately higher than the mean score of other group customers (3.26).

The results of the Kruskal-Wallis test show significant H-values in respect of district category (H=41.12, p=.00<.01) and income category (H=9.88, p=.0<.01) which leads to non-acceptance of null hypotheses H_01 and

$H_0 2$ at one per cent. On the other hand, there exists no significant difference in the opinion of the customers across various occupational groups as this category has a non-significant H value of 2.98. Thus, the null hypothesis $H_0 3$ is accepted.

Table 9 indicates that the male customers relatively feel that the SEWA centres are providing adequate comfort and physical ease as compared to the mean score of female customers whose mean score (3.23) is slightly lower than the mean score of male customers (3.42), whereas rural (3.45) and urban (3.34) customers based on residence category have shown affirmation with the underlying statement. The Mann-Whitney test also depicts non-significant value in both categories i.e. Z-value = -1.74 with p-value .08>.05 for gender category and Z value = -0.96 with p-value 0.34 >0.05 for residence category. This leads to acceptance of the null hypotheses $H_0 4$ and $H_0 5$ even at a five per cent level of significance.

It was observed during the survey that most of the customers have highlighted inadequate sitting arrangement at some centres and they have to stand in waiting lines for a long period which is very tiring and uncomfortable creating problem in availing service with physical ease and comfort at SEWA centre.

Conclusion and Recommendations

SEWA centres are contributing towards the welfare of society by providing over the counter services under one roof. As front end distributors, these centres are responsible for delivering good quality of services and must have all physical aspects required for achieving this objective. Overall, the results show positive opinions regarding the availability of 'adequate parking space' and 'ventilation and lighting facilities' at SEWA centres. On the other hand, results depict the lack of two important Appearances and Tangibles such as lack of display of a list of services and shortage of platforms for filling up forms. Similarly, most of the customers have mentioned that there is no water facility at some SEWA centres and no washroom facility reflecting their dissatisfaction with the hygiene factor of SEWA centres. Along with this most of the customers have highlighted inadequate sitting arrangements at some centres which makes availing services from SEWA centres a tiring and uncomfortable task for them. Thus, the availability of basic amenities is important for delivering better services to the citizens. The government should create a customer friendly environment for the citizens by ensuring the availability of all necessities required for smooth delivery of services at SEWA centres.

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