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"Service Quality and Student Satisfaction in Government Higher Education Institutions: An Analytical Investigation"

[1]Ms. Ridwana Hasan, [2]Dr. Mrs. Urvashi Shrivastava, [3]Dr. Dharmendra Kumar Gangeshwer

[1]Corresponding Author, Research Scholar (Management) Bhilai Institute of Technology, Durg

Chhhattisgarh India

[2]Professor (Department of Management) Bhilai Institute of Technology, Durg

Chhhattisgarh India

[3]Professor SoS (Department of Statistics) Pt.Ravi Shankar Shukla University,Raipur

Chhhattisgarh India

Abstract

The current study measure the service quality in government higher education institutions (HEIs) affiliated with Pt. Ravi Shankar Shukla University, situated in the Raipur district of Chhattisgarh. The study adopted the SERVQUAL model as the initial framework for assessing service quality and integrated student satisfaction as an outcome variable. To increase the relevance of the model within the higher education context, two other dimensions, namely teaching and learning outcome, were added with the five traditional SERQUAL dimensions: Reliability, Responsiveness, Assurance, Empathy, and Tangibility. Primary data were collected from 540 students enrolled in selected government higher education institutions through a structured questionnaire. Reliability analysis was conducted to evaluate the internal consistency of the measurement scale. The results revealed that the dimensions of Responsiveness and Empathy exhibited Cronbach's alpha values below the generally accepted threshold, indicating comparatively lower reliability. In contrast, the remaining dimensions demonstrated satisfactory levels of internal consistency and were considered reliable for further analysis. To evaluate service quality, students' expectation and perceptions were measured and compared across all the seven dimensions. To determine the difference between perceived and expected service quality gap score were calculated. The findings represent the existence of negative gaps across all dimensions, suggesting that students' expectation exceeded their perceptions of the service provided. From all the dimensions examined responsiveness and empathy recorded the largest gap score, indicating significant shortcoming in institutional responsiveness to student needs and provision of individual attention. On the contrary, the dimensions of Teaching, Learning Outcomes, Reliability, Assurance, and Tangibility exhibited relatively smaller gaps, indicating comparatively better performance. The study further evaluate change in perception, expectations and satisfaction level across different demographic characteristics of students. Overall, the result suggest that students are generally satisfied with the quality of service in by government higher education institutions. Moreover the identified service quality gap focuses on the need for continuous improvement, particularly in responsiveness and empathy, to better suits institutional performance with student expectations and improve educational service quality.

Keywords: Service Quality, SERVQUAL, Higher Education Institutions, Student Satisfaction, Expectations, Perceptions, Gap Analysis, Government Higher Education Institutions.

1. Introduction-Higher education is one of the important sectors in building our economy, so it must be well focused. By strengthening the education sector all other sectors grows and gain competitive advantage. It can be achieved only by providing quality education at the college level. Development in the youth is the outcome of

delivering the quality education.(Dursun, T. et al 2013)With the rapid growing economy of our country as well as Chhattisgarh state service industry also grow at a faster pace. One of the major contributors of the service sector industry in higher education. With the establishment of Chhattisgarh state in the year 2000, number of private colleges and universities is increasing, due to which the state Chhattisgarh government higher education institution faces new challenges. Government higher education facing competition with the global and local level with the private universities and college. It is very much necessary to deliver the quality service in the government college to meet the student needs and expectation (Chui, T. B., et al 2016)

The government higher education institutions takes more time i.e., five to seven years to provides the graduation degree and not providing quality service at the government institutions, rapid emergence of the private universities and colleges took place, they provides the quality education and provides graduation degree in lesser time i.e., four years. (Md. Hossain Moazzem et al 2019) In the higher education institution student is a customer, it is necessary to analyze the student requirement, if any institution fails to analyze the correct student requirement will fail to provide the quality. (Chou, S. 2004)Every service providing company is recognized by its service quality. Delivering a quality service in the higher education institution is a challenge to satisfy dynamic student need. Service quality is measured using the perceived and expected service quality. If the perception matched with the expectation of the student service is said to be quality service. (Zafiropoulos, C. et al 2008) Higher education is a complex structure of having multiple pupils in assessing the quality. Some major pupils plays an important role in assessing the quality are student, teacher, staff, management and government etc. The service is dependent on all the above pupils and they are evaluated by various parameters like student satisfaction, student value , perceived quality and the improvement mechanism. (Zineldin, M. et al 2011)

The most frequent tool in measure the service quality of any service industries is SERVQUAL (Parasuraman, Zeithaml and Berry, 1985, 1988, 1991) it has widely used. This SERVQUAL instrument having two side i.e., perception and expectation side. There are five sub-dimensions such as tangibility, reliability, responsiveness, assurance and empathy.(Parasuraman, Zeithaml y Berry, 1988) (Cardona, M. M.et al 2012). In the present study this SERVQUAL instrument is used with some new dimension added in the research to especially fits the education industries specific requirement.Every higher education institution in the service industry has to maintain its quality for the sustainable development.(Yousapronpaiboon, K. 2014). The present study use to measure the service quality using SERVQUAL model to identify the gap between the service expectation and perception, to provide the improvement strategies for the government higher education institute.

2.Research Methodology-

The present study is based on the service quality measurement using the SERVQUAL model with some new dimension in the higher educational institution in the Pt. Ravi Shankar University in Raipur district of Chhattisgarh State. The seven dimensions (teaching quality, learning outcome, reliability, responsiveness, empathy, assurance and tangibility) on the expected service quality having 32 items was taken to measure the student. Both the expectation and perception of the service quality is measure to analysze the discripancies / gap between each dimension of the service quality. (Zeithaml, Parasuraman and Berry's 1996, p. 23).If the expected service meets the perceived service quality than the service is said to be good and if the expected service quality does not meet the perceived service quality ,than the student dissatisfaction occur which need service improvement matrix. The SERVQUAL model is also called as gap analysis.

The main objective to analyze the gap between the expected service quality and perceived service quality, so that service improvement policy should be revised. The expected and perceived service quality both were taken as an independent variable. The third variable used under the study was student satisfaction 24 items were taken, it is dependent variable which depend on the expected and perceived service quality. The questionnaire first part

having the student expectation and second part consist of the student perception. The third part consist of the student satisfaction related questions. All the questions are in the five point likert scale (1=Strongly agree, 5=Strongly disagree).In the state Chhattisgarh ,Pt. Ravi Shankar Shukla University its affiliated government college were taken under the study .This college are classified as rural as well as urban especially in the Raipur district only.

3.Proposed Service Quality Model

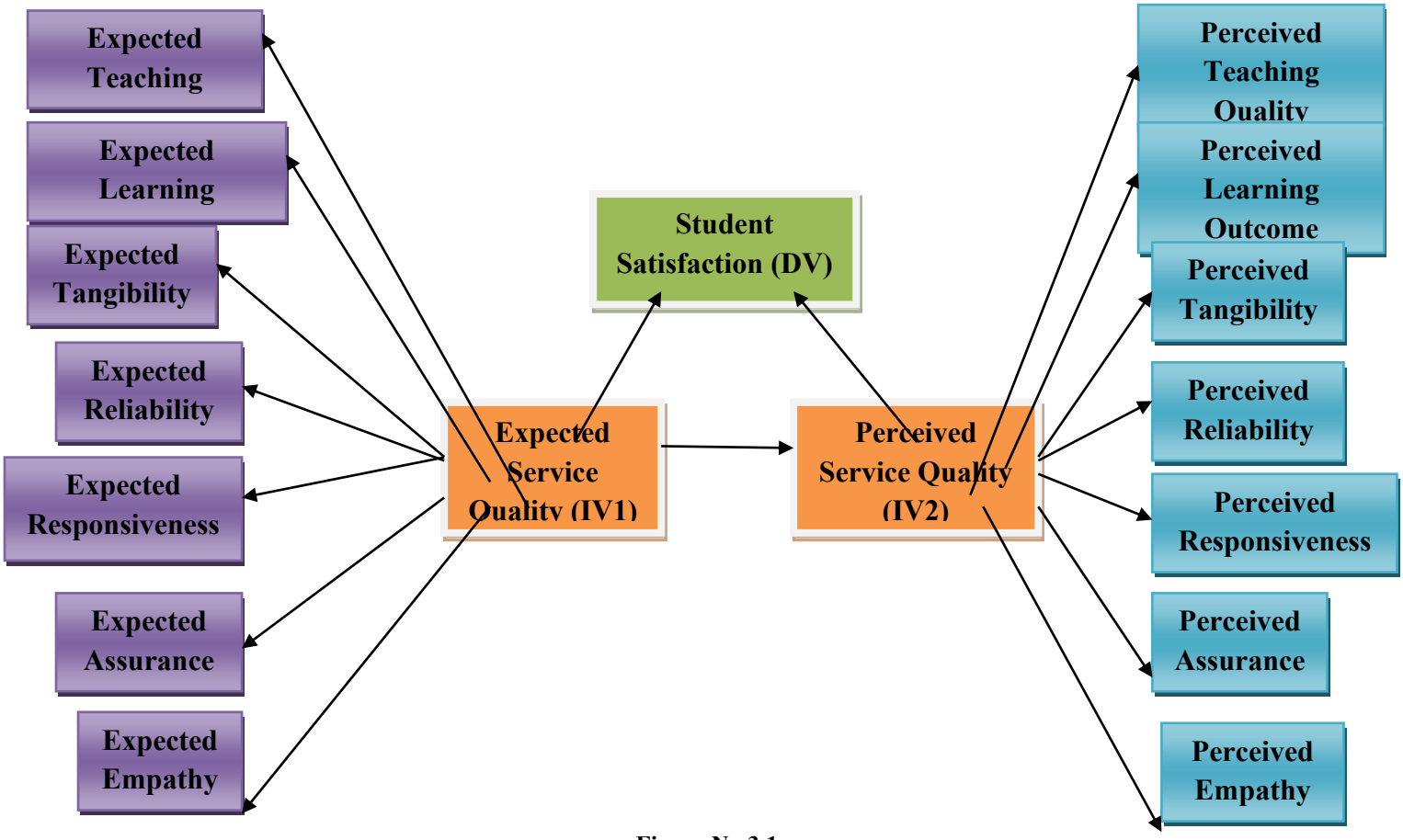

Figure No.3.1

4.Finding and Discussion

4.1 Reliability Analysis

Reliability testing is the concept of research to find whether the instrument used in the research gives the same result all the time. If the instrument gives the same result repeated number of times than it is said to be reliable The reliability analysis(internal consistency) is done through many ways, in which the most frequently using the coefficient cronbach's alpha. The value of the cronbach alpha range between 0 to 1.0 (Tavakol et al 2011) If the value of cronbach alpha range between 0.90 to 0.70 it means a good reliability value and if the value is less than 0.70 than there is weak reliability.(George et al 2003) In the present analysis except expected responsiveness, empathy and perceived responsiveness the reliability analysis the value of cronbach alpha is

accept limit. The cronbach alpha is calculated for both the expectation and perception side sub-dimension of SERVQUAL.

Table No.1 Reliability Coefficient (Cronbach α)

	Expectation	Perception
Total Scale	0.945	0.939
Teaching quality	0.824	0.821
Learning Outcome	0.838	0.838
Reliability	0.790	0.770
Responsiveness	0.694	0.611
Assurance	0.703	0.741
Empathy	0.693	0.771
Tangibility	0.813	0.786

Source: Primary Data

4.2 Demographic Variable Analysis and Interpretation

Table No.2 Demographic Profile of Respondent (Gender, Age, Residence and Program Studied)

	Number of Respondent	Percentage
1.Gender Distribution		
Female	359	66.50%
Male	181	33.50%
2.Age Distribution		
Below 18 Yrs	108	20%
19-23 Yrs	381	70.60%
24-28 Yrs	36	6.70%
Above 28 Yrs	15	2.80%
3.Residence		
Urban	486	90%
Rural	54	10%
4.Program Studied		
Diploma	30	5.60%
Graduation	408	75.60%
Post Graduation	93	17.20%
Research Scholar	9	1.70%

Source: Primary Data

The demographic profile of the respondents were analyzed, total seven dimension of the respondent s were taken in the study which are directly related to the dependent variable in the study. The seven dimensions are gender, age, residence, program studied, year studied, stream and marital status. Out of total respondent 66.50% are female and 33.850% male. It means maximum respondent were female and minimum respondent belongs to male. 20% respondents belong to the age of below 20 years,70.60% respondent belong to the age group of 19 to 23 years ,6.70% respondent belong to the age group of 24 to 28 years and 2.80% respondent belong to the age above 28 years. It means the maximum students studying in the college is between 19 to 23 years and minimum students belong to above 28 years. In the present study the maximum respondent i.e., 90% belongs to urban and minimum respondent belong to rural i.e., 10%. 5.60% students studying diploma, 75.60% students studying graduation, 17.20% student studying post graduation and 1.70% are research scholars.It means that maximum strength in the college is of graduates and minimum strength is of research scholars.

Table No.3 Demographic Profile of Respondent (Year of Studied, Stream Studied and Marital Status)

	Number of Respondent	Percentage
5.Year of Studied		
First Year	192	35.60%
Second Year	168	31.10%
Third Year	168	31.10%
Fourth Year	3	0.60%
Fifth Year	9	1.70%
6.Stream Studied		
Mathematics	9	1.70%
Science	39	7.20%
Commerce	336	62.20%
Arts	111	20.60%
Other	45	8.30%
7.Marital Status		
Unmarried	526	97.40%
Married	14	2.60%

Source: Primary Data

The 31.10% students belongs to first year and same percentage student belong to second year, 35.60% student belong to third year, 0.60% students belongs to fourth year and 1.70% student belong to fifth year. It means that maximum students are from third year and minimum student from fifth year, the older student can analyze the service quality in a better way than newer students.1.70% students belongs to mathematics stream, 7.20% students belongs to Science stream,62.20% students belongs to Commerce stream, 20.60% students belongs to arts stream and 8.30% students belongs to other stream. It means that maximum students belongs to commerce and minimum students from mathematics stream. 97.40% students are unmarried and 2.60% students are

married. It means that the maximum student s studying in the college are unmarried and minimum students studying belongs to married category.

4.3 Service quality comparison by Demographic variable

Table No.4 Comparison test of perceived service quality by Gender

	Age	N	Mean	SD	SEM	t	p(sig.)
Teaching	Male	181	14.9282	4.23875	.31506	3.279	0.010
	Female	359	13.7242	3.57118	.18848		
Learning Outcome	Male	177	15.7790	4.58207	.34058	3.393	0.164
	Female	357	15.2089	4.44373	.23453		
Reliability	Male	177	11.7348	3.18091	.23643	2.997	0.030
	Female	357	10.8802	3.02035	.15941		
Responsiveness	Male	177	9.5967	2.43534	.18102	2.512	0.012
	Female	357	9.0251	2.52627	.13333		
Assurance	Male	177	8.9724	2.36039	.17545	3.76	0.000
	Female	357	8.1616	2.37576	.12539		
Empathy	Male	177	9.3646	2.74867	.20431	0.052	0.959
	Female	357	9.3510	3.12575	.16497		
Tangibility	Male	177	11.7845	2.97639	.22123	1.62	0.106
	Female	357	11.3231	3.39919	.17940		
Student Satisfaction	Male	177	58.5856	17.7379	1.3184	0.198	0.843
	Female	357	58.2897	13.3630	0.7053		

SD=Standard Deviation SEM=Standard Error mean Independent t-test results

Source: Primary Data

An independent t-test was used to compare for all dimension of perceived service quality and student satisfaction for male and female student studying in college. Firstly normality test of dependent variable was analyzed, after that Levene test checked. Both the test were fulfilled. There is no significant difference found in the perceived learning outcome, empathy,tangibility, and student satisfaction across the gender i.e., male and female, As the p value is greater than 0.05 ,it means the null hypothesis is accepted. The gender do not have significant effect on perceived learning outcome, empathy,tangibility, and student satisfaction. (Field, A. 2018)

In the variable of perceived teaching, reliability, responsiveness and assurance, it was found there is significant difference across gender i.e., male and female, as the p value is less than 0.05. It means the alternative hypothesis is accepted. The gender do have significant effect on perceived teaching, reliability, responsiveness and assurance .(Pallant, J. 2020)

Table No.5 Comparison test of perceived service quality by Marital Status

	Marital Status	N	Mean	SD	SEM	t	p(sig.)
Teaching	Single	526	14.1369	3.84612	.16770	-0.547	0.584
	Married	12	14.7500	3.41454	.98569		
Learning Outcome	Single	526	15.4582	4.46672	.19476	0.925	0.355
	Married	12	14.2500	4.80766	1.38785		
Reliability	Single	526	11.1996	3.10944	.13558	1.085	0.297
	Married	12	10.7500	1.35680	.39167		
Responsiveness	Single	526	9.2548	2.52299	.11001	5.885	0.000
	Married	12	8.2500	.45227	.13056		
Assurance	Single	526	8.4544	2.41440	.10527	1.219	0.233
	Married	12	8.2500	.45227	.13056		
Empathy	Single	526	9.4011	3.01815	.13160	6.21	0.010
	Married	12	8.2500	.45227	.13056		
Tangibility	Single	526	11.5247	3.28262	.14313	4.929	0.010
	Married	12	10.5000	.52223	.15076		
Student Satisfaction	Single	526	58.6198	14.99866	.65397	2.499	0.027
	Married	12	52.5000	8.17424	2.35970		

SD=Standard Deviation SEM=Standard Error mean Independent t-test results

Source: Primary Data

An independent t-test was used to compare for all dimension of perceived service quality and student satisfaction by the marital status i.e., single and married. Firstly normality test of dependent variable was analyszed, after that Levene test checked. Both the test were fulfilled. There is no significant difference found in the perceived teaching, learning outcome, reliability,assurance across marital status i.e., single and married, As the p value is greater than 0.05 ,it means the null hypothesis is accepted. The marital status do not have significant effect on perceived teaching, learning outcome, reliability,assurance. (Field, A. 2018)

In the variable of perceived teaching, reliability, responsiveness and assurance, it was found there is significant difference across marital status i.e., single and married., as the p value is less than 0.05. It means the alternative hypothesis is accepted. The marital status do have significant effect on perceived teaching, reliability, responsiveness and assurance .(Pallant, J. 2020)

Table No.6 Homogenity test for Age group

	Levene Statistics	df1	df2	Sig.
Teaching	0.313	3	536	0.816
Learning Outcome	1.364	3	536	0.253
Reliability	1.37	3	536	0.251
Responsiveness	1.085	3	536	0.355
Assurance	0.807	3	536	0.491
Empathy	3.255	3	536	0.021
Tangibility	2.599	3	536	0.051
Student Satisfaction	2.957	3	536	0.032

Welch Test

The sig.(p) value is greater than 0.05, it means null hypothesis is true equal variance exist among the sub dimension of the age group with respect to the service quality sub-dimensions. In the dimension are teaching, learning outcome, reliability,responsiveness, assurance in the Levene test. In the sub-dimension of service quality empathy, tangibility, students satisfaction the sig.(p) value is less than the 0.05 , it means the null hypothesis is not true equal variance is not observed in the sub-dimension of the age group. (Levene, H.1960) Due to violation of the homogeneity test in few dimension of the service quality Welch test is also performed.

Table No.7Comparison test of perceived service quality by Age Group

		Sum of Square	df	Mean square	F	Sig.
Teaching	Between Groups	112.329	3	37.443	2.553	.055
	Within Groups	7861.855	536	14.668		
	Total	7974.183	539			
Learning Outcome	Between Groups	376.044	3	125.348	6.392	.000
	Within Groups	10511.556	536	19.611		
	Total	10887.600	539			
Reliability	Between Groups	108.301	3	36.100	3.819	.010
	Within Groups	5066.699	536	9.453		
	Total	5175.000	539			
Responsiveness	Between Groups	105.115	3	35.038	5.714	.001
	Within Groups	3286.535	536	6.132		
	Total	3391.650	539			
Assurance	Between Groups	49.531	3	16.510	2.899	.035

	Within Groups	3053.069	536	5.696		
	Total	3102.600	539			
	Between Groups	146.923	3	48.974	5.572	.001
Empathy	Within Groups	4710.810	536	8.789		
	Total	4857.733	539			
	Between Groups	96.824	3	32.275	3.056	.028
Tangibility	Within Groups	5659.909	536	10.560		
	Total	5756.733	539			

P =0.01 is significant

4.4 Comparison of Perceived Service Quality by Age Group

Table No. 7 presents the results of a one-way Analysis of Variance (ANOVA) conducted to examine whether students' perceptions of service quality differ significantly across various age groups. The analysis was performed for the dimensions of teaching, learning outcome, and the SERVQUAL dimensions, namely reliability, responsiveness, assurance, empathy, and tangibility. For the purpose of interpretation, a significance level of **$p \leq 0.01$** was considered.

The finding indicates that teaching dimension has the F value recorded as 2.553 with a significance of 0.005. Since the p value is greater than the prescribe significance value, there is no statistically significant difference is observed among age group in the perceived teaching quality. This represents that student belonging to different age group have same type of perceptions with respect to teaching practices in the institution in the study.

Similarly, the learning outcome dimension have the F value of 6.392 with a significance value of 0.000 which is below the prescribe limit of 0.01. This result indicates a statistically significant difference in perceived learning outcomes among age groups. The finding suggests that students' evaluation of academic gains, skill development, and overall leaning effectiveness differs as the age group changes.

The reliability, dimension have the F value of 3.819 and a p-value of 0.010, representing a statistically significant difference at the 0.01 level of significance. This result reveals that perceptions related to the consistency, accuracy and dependability of the institutional service differ among students of different age groups.

The responsiveness dimension has the F value of 5.714 and a significant variation across age groups and a significance value of 0.001. This shows that students' perceptions regarding the promptness of services, willingness of staff to help and timely response to student needs are influenced by age.

In assurance dimension, the F value is 2.899 with a p-value of 0.035. As the value is higher than the threshold level of significance, there is no statistical significant difference observed across age groups. This suggests that perception related to the knowledge, courtesy and trustworthiness of faculty and staff remain consistent with respect to students' age.

The empathy dimension value of 5.572 with a significance value of 0.001 representing statistically significant difference with respect to age groups. The result implies that students of different ages varies in their perceptions of individualized attention,, understanding and care provided by the institutions.

At last, the tangibility dimension has the F value of 3.056 with a p-value of 0.028, which is lesser than 0.01 significance level. It means that there is no significance difference is found across age group with respect to perception of physical facilities, equipment and infrastructural resources.

Overall, the result of ANOVA reveals that age group has a significant influence on students' perceptions of learning outcomes, reliability, responsiveness and empathy, whereas teaching, assurance and tangibility do not differ significantly across age groups. These findings indicate that while core instructional delivery and physical infrastructure are perceived uniformly, outcome-oriented and interaction-based aspects of service quality vary with age. This importance of adopting age-sensitive academic.

Table No.8 Service Quality Scores Between Income Groups by Welch Test

		Statistic[a]	df1	df2	Sig.
Tangibility	Welch	3.812	4	42.666	.010

Source: Primary Data

4.5 Service Quality Scores between Income Groups by Welch Test

Table No. 8 presents the results of the **Welch test** conducted to examine whether students' perceptions of the **tangibility dimension of service quality** differ significantly across different income groups. The Welch test is considered an appropriate alternative to one-way ANOVA when the assumption of homogeneity of variances is violated, thereby providing more robust and reliable results for group comparisons.

The results show a **Welch statistic value of 3.812**, with **degrees of freedom (df1 = 4, df2 = 42.666)** and a **significance value of 0.010**. Since the p-value is equal to the prescribed level of significance (**$p \leq 0.01$**), the null hypothesis of no difference among income groups is rejected.

This finding indicates that there is a **statistically significant difference in perceived tangibility of service quality among students belonging to different income groups**. In other words, depending on their income level, students have different opinions about the physical facilities, infrastructure, equipment, and other tangible characteristics of institutional services. Students from various socioeconomic origins may have varied standards and expectations for the physical resources and facilities on campus, which affects how they see the quality of the services.

In other words, students' evaluations of physical facilities, infrastructure, equipment, and other tangible aspects of institutional services vary according to their income level. Students from different economic backgrounds may have differing expectations and standards regarding campus facilities and physical resources, which influence their perceptions of service quality.

The result underscores the importance of considering **socio-economic diversity** while planning and upgrading tangible resources in higher education institutions. Improving and equitably maintaining physical infrastructure may help institutions address perceptual disparities among students from varied income groups and enhance overall service quality satisfaction.

Table No.9 Comparison Tests for Perceived Service Quality by Income Groups (One-way ANOVA)

		Sum of Squares	df	Mean Square	F	Sig.
Teaching	Between Groups	284.798	4	71.200	4.954	.001
	Within Groups	7689.385	535	14.373		
	Total	7974.183	539			
Learning Outcome	Between Groups	231.990	4	57.998	2.912	.021
	Within Groups	10655.610	535	19.917		
	Total	10887.600	539			
Reliability	Between Groups	141.974	4	35.494	3.773	.005
	Within Groups	5033.026	535	9.408		
	Total	5175.000	539			
Responsiveness	Between Groups	87.101	4	21.775	3.525	.007
	Within Groups	3304.549	535	6.177		
	Total	3391.650	539			
Assurance	Between Groups	54.697	4	13.674	2.400	.049
	Within Groups	3047.903	535	5.697		
	Total	3102.600	539			
Empathy	Between Groups	195.104	4	48.776	5.597	.000
	Within Groups	4662.629	535	8.715		
	Total	4857.733	539			
Tangibility	Between Groups	82.233	4	20.558	1.938	.103

Within Groups	5674.500	535	10.607
Total	5756.733	539	

Source: Primary Data

4.6 Comparison Tests for Perceived Service Quality by Income Groups (One-way ANOVA)

Table No. 9 presents the results of a one-way Analysis of Variance (ANOVA) conducted to examine whether students' perceptions of service quality differ significantly across various income groups. The analysis was carried out for teaching, learning outcome, and the SERVQUAL dimensions, namely reliability, responsiveness, assurance, empathy, and tangibility. The interpretation is made at a **1 per cent level of significance ($p \leq 0.01$)**, in line with the study's statistical criteria.

The ANOVA results for **teaching** indicate an F value of 4.954 with a significance value of 0.001. As the p-value is less than 0.01, the null hypothesis of no difference among income groups is rejected. This finding suggests a **statistically significant difference in perceived teaching quality across income groups**, implying that students' economic background influences their evaluation of teaching effectiveness and instructional practices.

With respect to **learning outcome**, the F value is 2.912 with a significance value of 0.021. Since the p-value exceeds the 0.01 level of significance, no statistically significant difference is observed among income groups in terms of perceived learning outcomes. This indicates that students, irrespective of their income levels, report relatively similar perceptions regarding academic achievement and learning gains.

In the reliability dimension observed as F value of 3.773 and p-value of 0.005, which is less than specified significance level. There is statistically significant difference exists among income groups in perceptions related to reliability. This implies that students from different income group varies in their evaluation of the institution's ability to provide dependable and accurate services.

In the responsiveness dimension, the F value is found to be 3.525 with the significance value of 0.0007. As the p-value is less than 0.01, the difference between income groups is statistically significant. This finding revels that perceptions regarding prompt service delivery and the willingness of staff to assist students vary according to income group.

The assurance dimension observed the F value of 2.400 and the p-value of 0.049. Since this value is greater than the 0.01 threshold, the difference among income categories have the similar perceptions regarding the competence, courtesy and credibility of faculty staff.

The empathy dimension observed the F value of 5.597 with the significance value of 0.000, showing a highly significant difference among income groups. This indicates that students' perceptions of individualized attention, care and understanding provided by institutions are significantly influenced by their income level.

At last, the tangibility dimension observed the F value of 1.938 with the significance value of 0.103. It means the p-value exceeds the level of significance, there is no statistically significant difference is observed in the income groups in the terms of physical facilities, infrastructure and equipment.

In summary, the findings reveal that **income group significantly influences students' perceptions of teaching, reliability, responsiveness, and empathy**, while **learning outcome, assurance, and tangibility do not differ significantly across income groups** at the 1 percent level. These results highlight the role of socio-economic factors in shaping perceptions of interactional and process-oriented aspects of service quality, underscoring the need for inclusive and equitable service delivery strategies in higher education institutions.

Table No. 10 Expectation And Perception Averages of students And Expectation-Perception Gap Scores

			Perception		Expectation		Gap Score	Sum of Gap Score	Gap average
Dimension	Statements (K)	N	PM	SD	EM	SD	PM-EM		Total Gap/K
Teaching Quality	1	540	1.73	0.73	1.63	0.683	0.1	1.49	0.212857143
	2	540	1.99	0.723	1.8	0.847	0.19		
	3	540	1.93	0.772	1.71	0.773	0.22		
	4	540	2.3	0.901	2.09	0.893	0.21		
	5	540	1.96	0.763	1.74	0.769	0.22		
	6	540	2.18	0.834	1.94	0.773	0.24		
	7	540	2.03	0.803	1.72	0.769	0.31		
	Overall mean		2.01714	3.84	1.80429	3.85			
Learning outcome	8	540	2.07	0.824	1.92	0.84	0.15	1.33	0.19
	9	540	2.25	0.823	1.98	0.907	0.27		
	10	540	2.21	0.9	1.97	0.823	0.24		
	11	540	2.13	0.857	2.02	0.796	0.11		
	12	540	2.2	1.073	2.05	0.927	0.15		
	13	540	2.28	0.889	2.02	0.879	0.26		
	14	540	2.27	0.923	2.12	0.855	0.15		
	Overall mean		2.20143	4.49	2.01143	4.3			
Reliability	15	540	2.47	0.992	2.09	0.945	0.38	0.92	0.184
	16	540	2.12	0.815	1.98	0.847	0.14		
	17	540	2.27	0.863	2.05	0.865	0.22		
	18	540	2.2	0.82	2.07	0.902	0.13		
	19	540	2.1	0.79	2.05	0.927	0.05		
	Overall mean		2.232	3.09	2.048	3.31			
Responsiveness	20	540	2.41	0.954	2.17	0.917	0.24	0.66	0.165
	21	540	2.52	1.139	2.41	1.069	0.11		
	22	540	2.12	0.777	2.01	0.793	0.11		

		23	540	2.17	0.774	1.97	0.742	0.2		
		Overall mean		2.305	2.5	2.14	2.56			
Assurance		24	540	2.08	0.81	1.74	0.732	0.34		
		25	540	2.09	0.812	1.88	0.758	0.21	0.93	0.2325
		26	540	2.21	0.808	1.93	0.794	0.28		
		27	540	2.06	0.766	1.96	0.799	0.1		
		Overall mean		2.11	2.39	1.8775	2.24			
	Empathy	28	540	2.41	1.038	2.37	1.033	0.04		
		29	540	2.07	0.899	2.53	1.124	-0.46	0.32	0.08
		30	540	2.41	1.011	2.11	0.869	0.3		
		31	540	2.47	0.946	2.03	0.8	0.44		
		Overall mean		2.34	3	2.26	2.78			
Tangibility		32	540	2.28	0.839	2.02	0.87	0.26		
		33	540	2.33	0.788	2.06	0.798	0.27		
		34	540	2.1	0.89	2	0.851	0.1	1.17	0.234
		35	540	2.31	0.897	2.12	0.798	0.19		
		36	540	2.46	1.019	2.11	0.867	0.35		
		Overall mean		2.296	3.26	2.062	3.16			
								Sum		1.298357143
								Sum/7=SERVQUAL Score		0.185479592

K= Number of statements within one dimension

Source: Primary Data

4.7 Expectation–Perception Averages and SERVQUAL Gap Scores

Table No. 10 presents the expectation and perception scores of students regarding service quality across seven dimensions, namely teaching quality, learning outcome, reliability, responsiveness, assurance, empathy, and tangibility. The SERVQUAL gap model has been employed to assess service quality, wherein the gap score is computed as the difference between perception and expectation scores (PM – EM). The analysis is based on responses obtained from 540 students. A positive gap score indicates that perceived service quality exceeds students' expectations, whereas a negative gap score reflects unmet expectations.

In the dimension of teaching quality, the overall mean perception (PM=2.02) is greater than the mean expectation score (EM=1.80), resulting in positive gap score across all seven statements. The average gap score for this dimension is 0.213, representing that students perceive teaching practices to be moderately better than expected quality. This finding suggests satisfactory performance of faculty in terms of instructional delivery, clarity and academic support.

In learning outcome dimension, the overall mean perception score (PM=2.20) exceeds the expectation score (EM=2.01). All items under this dimension observed positive gap scores, with an average gap score of 0.19. This finding shows that student's perceptions of academic achievement, skill acquisition, and overall learning effectiveness marginally surpass their initial expectations.

The **reliability** dimension also shows a positive expectation–perception gap, with an overall mean perception score of 2.23 and an expectation score of 2.05. The average gap score of 0.184 indicates that students perceive institutional services to be dependable and consistent, though the relatively moderate gap suggests scope for further improvement in service accuracy and reliability.

Likewise responsiveness, the overall mean perception score (PM=2.31) is greater than the expectation score (EM=2.14). The average gap score of 0.165 shows that students are moderately satisfied with the promptness of services of services and the willingness of staff to address student needs. However, the comparatively lower gap value suggests that responsiveness remains an area requirement

The **assurance** dimension records an overall mean perception score of 2.11 compared to an expectation score of 1.88, resulting in an average gap score of 0.233. This relatively higher positive gap indicates that students perceive faculty and staff as knowledgeable, courteous, and capable of instilling confidence beyond their expectations.

In the **empathy** dimension, the results reveal a comparatively smaller average gap score of 0.08. Although the overall mean perception score (PM = 2.34) slightly exceeds the expectation score (EM = 2.26), the presence of a negative gap score for one statement indicates that certain aspects related to individualized attention and understanding of students' needs are not fully meeting expectations. This dimension emerges as the weakest among the service quality dimensions examined.

The **tangibility** dimension demonstrates an overall mean perception score of 2.30 and an expectation score of 2.06, yielding an average gap score of 0.234. This suggests that students perceive physical facilities, infrastructure, and learning resources to be better than expected, reflecting satisfactory performance in tangible service elements.

Overall, the sum of average gap scores across the seven dimensions amounts to 1.298, resulting in an overall SERVQUAL score of 0.185. The positive SERVQUAL score indicates that, on the whole, students' perceptions of service quality exceed their expectations. However, the variation in gap scores across dimensions highlights differential performance levels, with assurance, tangibility, and teaching quality demonstrating relatively stronger outcomes, while empathy and responsiveness require focused quality improvement initiatives. These findings underscore the utility of the SERVQUAL model in identifying both strengths and areas for enhancement in service quality within higher education institutions.

The service quality analysis is done on the basis of the perceived service quality and expected service quality the mean and standard deviation of the expected service quality in their various sub-dimensions are empathy(M=2.26,SD=2.78) has highest mean score followed by responsiveness (M=2.14, SD=2.56), tangibility(M=2.062,SD=3.16),reliability (M=2.048,SD=3.31), learning outcome(M=2.011,SD=4.30), assurance (M=1.877,SD=2.24) and teaching quality has lowest mean score (M=1.80,SD=3.85). On the basis of the perceived service quality in their various sub-dimensions are empathy (M=2.34, SD=3.00) has highest mean score followed by responsiveness (M=2.305, SD=2.50), tangibility (M=2.296,SD=3.26), reliability (M=2.23,SD=3.09), learning outcome(M=2.20,SD=4.49), assurance (M=2.11,SD=2.39) and teaching quality has lowest mean score (M=2.017,SD=3.84).

Among all the seven dimensions of expected service quality and perceived service quality gap analysis was performed to find out the mean gap score of the SERVQUAL dimensions. The gap score of all the dimension

indicates that the service quality at the college needs to be improved. In the teaching quality dimension highest gap was found i.e., 1.49 and the lowest gap was found in the empathy dimension i.e., 0.32. So it means that most satisfying dimension is empathy and least satisfying dimension is teaching quality. The overall gap score was found to be 0.18 it means that the perceived service quality exceeds the expected service quality in the college, so the college provides the good service to their students. It concluded that the student were satisfied. (Parasuraman et al 1988 & 1991)

5.Conclusion

The present study employed the SERVQUAL framework by addition two new dimensions which was suitable in the context of the higher education institution in the institutions affiliated with Pt. Ravi Shankar Shukla University in the Raipur District of Chhattisgarh State. The new dimensions added in the SERVQUAL scale were teaching and learning outcome, the research carried offers more holistic evaluation of service quality as experienced by students. The finding highlights the relevance and applicability of the modified SERVQUAL model for assessing service quality in government higher education institutions.

This empirical finding indicates that while students are generally satisfied with the overall service quality offered by government HEI's, there is a notable gaps present between expected and perceived service quality across specific dimensions. In the dimensions, responsiveness and empathy emerged as lacunae in the areas of concern, exhibiting the highest gap score and comparatively lower reliability levels. These findings suggest that institutional service delivery in terms of promptness, individualized attention, and student-centric support requires focused improvement.

Conversely, the remaining service quality dimensions, including tangibility, reliability, assurance, teaching, and learning outcomes, demonstrated relatively lower gap scores, indicating closer alignment between students' expectations and perceptions. This found that the strengths of government HEI's in delivering core academic services and learning outcomes. Overall, the study focus the need of target managerial and policy level interventions aimed at increasing responsiveness and empathy, thereafter improving student satisfaction and overall service quality in government higher education institutions.

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Data availability: The primary data is collected using the response of the college students on request and analyzed.

Declarations: From all the respondents informed consent was taken in the study. Respondent was informed about the purpose of the study and there voluntary participation was taken.The study ensuring compliance with ethical guidelines and protection of students' rights. The study complies with ethical guidelines and protection of students' rights.

a. Ethical Approval: This study does not involve human or animal experimentation; therefore ethical approval was not required from any ethical board. Ethics approval was secured from Institutional Review Board (IRB) at Bhilai Institute of Technology, Durg, India.

b. Consent to Participate: Informed consent was obtained from all participants who voluntarily agreed to take part in the study.

c. Consent to Publish: The authors confirm that consent for publication of the research findings has been obtained and that no personal identifying information of participants is included in this manuscript.

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