Independent Quality of Service Survey in Pakistan – Cities

Fourth Quarter 2025

Enforcement Division
PTA | F-5/1, Islamabad

Executive Summary

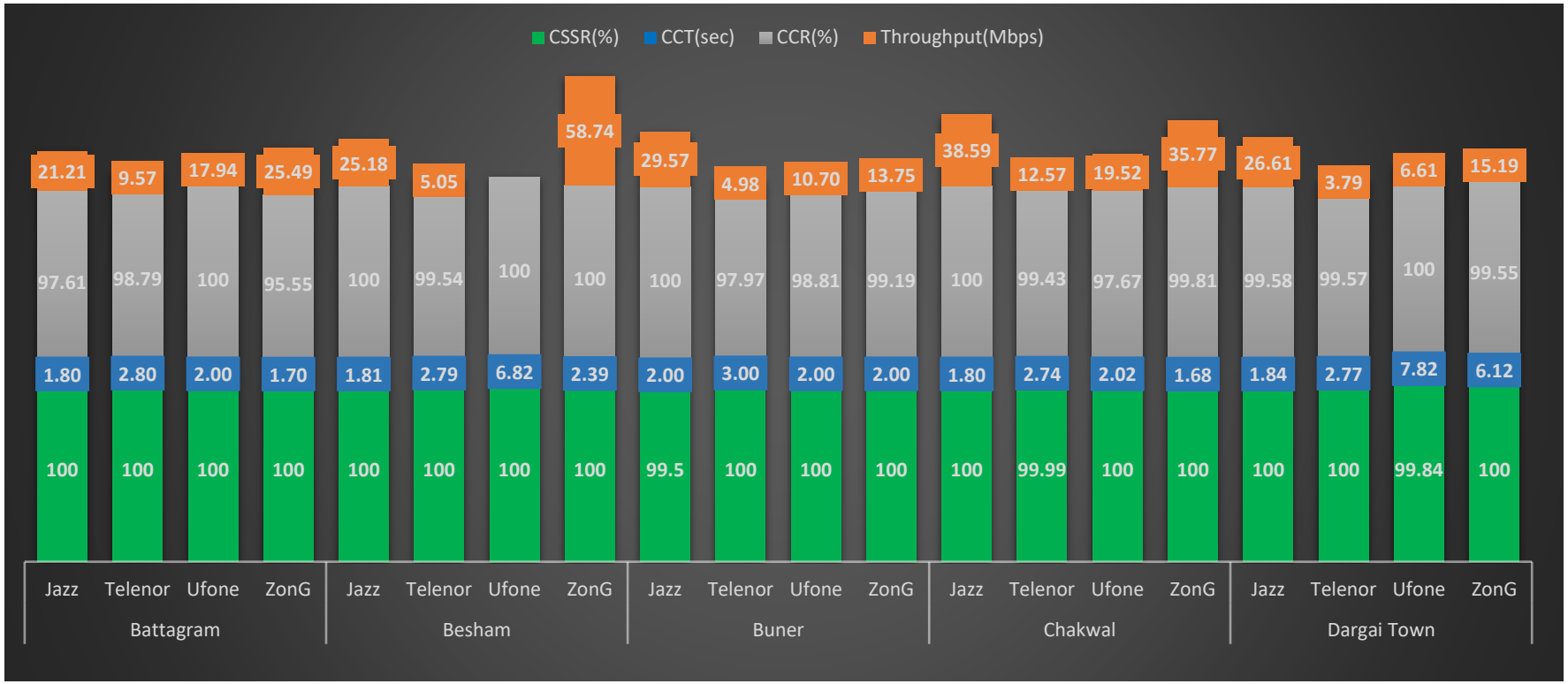
1. QUALITY OF SERVICE SURVEY

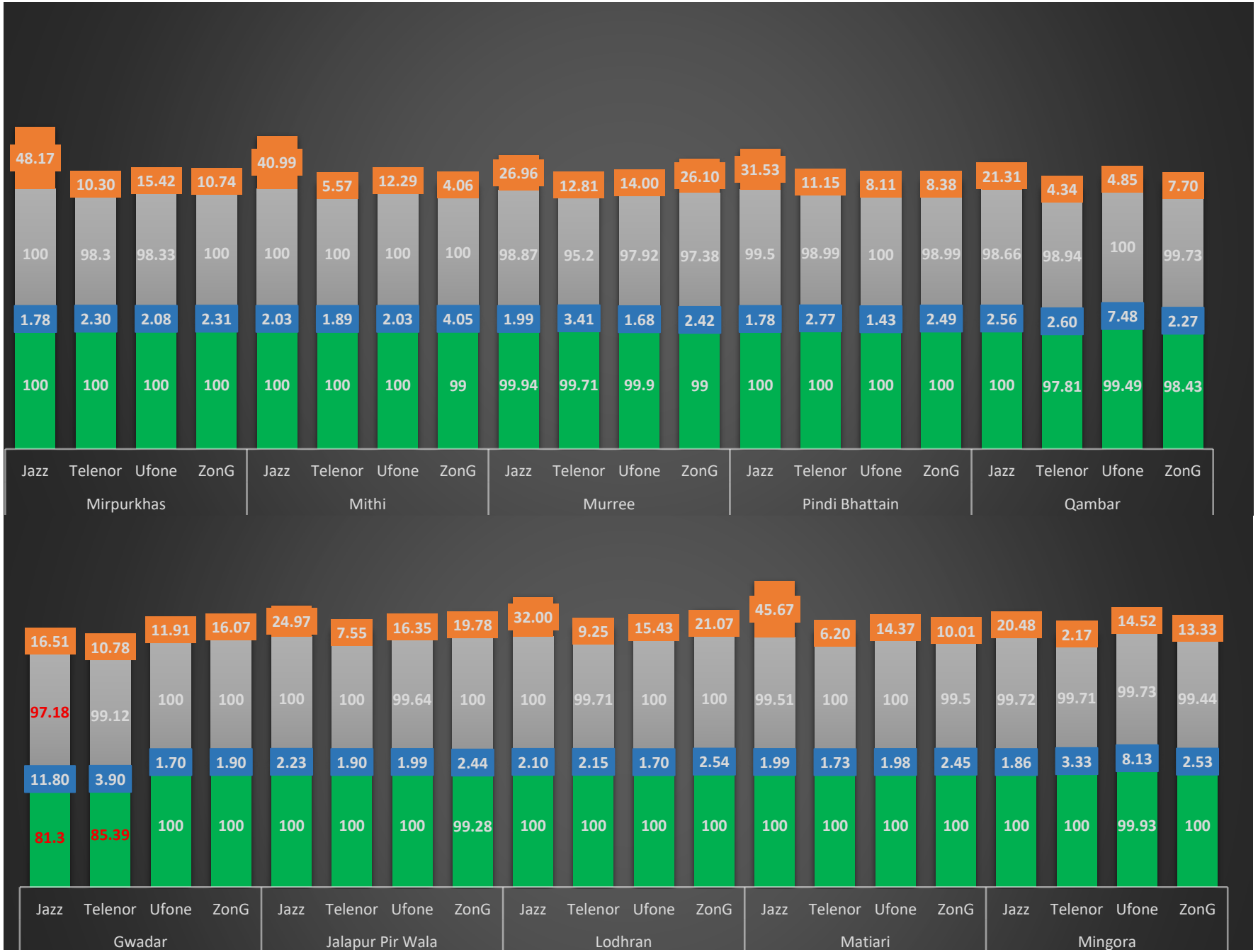
Pakistan Telecommunication Authority (PTA) has carried out independent Quality of Service (QoS) Survey in 20 x cities of Pakistan during 4th Quarter 2025. During the survey, the performance of Cellular Mobile Operators (CMOs) has been assessed in accordance with the Cellular Mobile Network QoS Regulations 2021. Survey comprised of approximately 46,000 Voice Calls and SMS while 0.33 million samples were checked to measure the broadband performance of CMOs. Summary of the drive, city wise and overall results are below:

2664 KMs Travelled

74 Days Survey

20 Cities Tested

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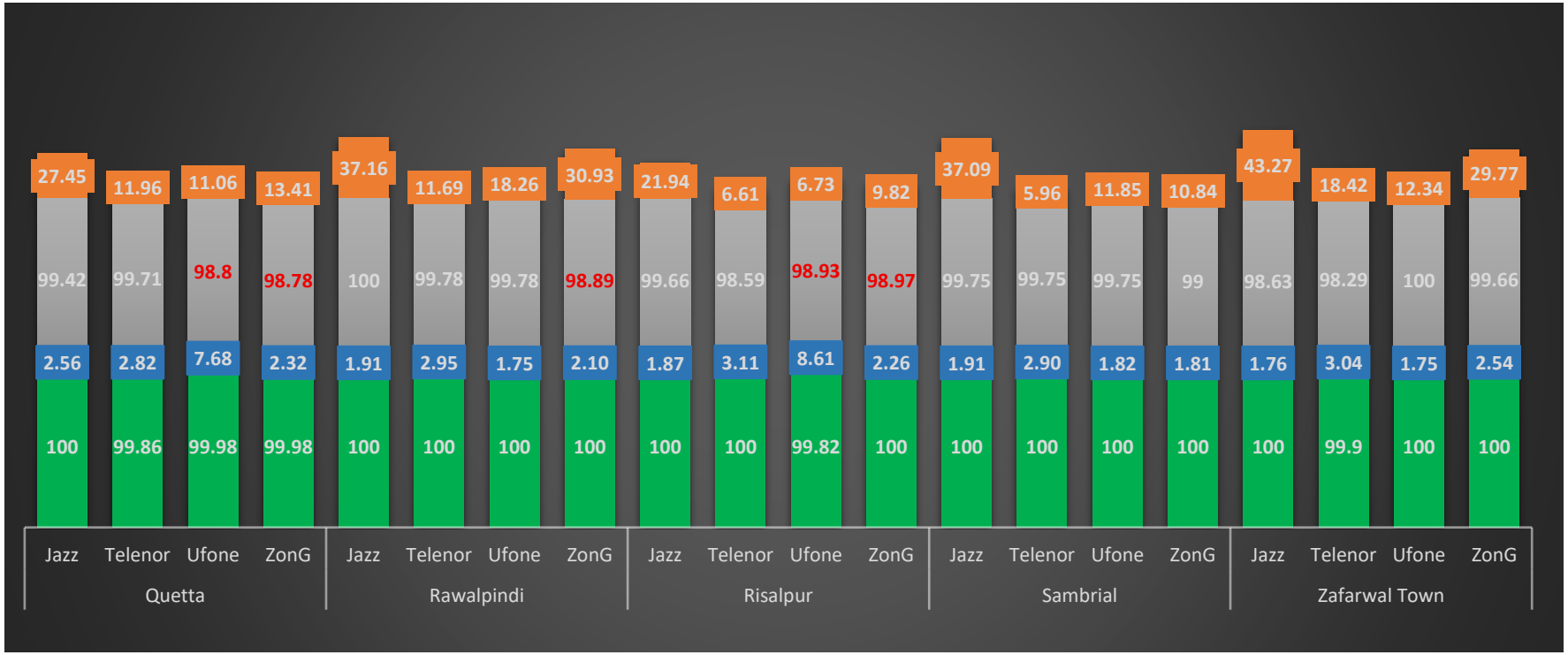
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Rawalpindi
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ZonG
Risalpur
Jazz
Telenor
Ufone
ZonG
Sambrial
Jazz
Telenor
Ufone
ZonG
Zafarwal Town

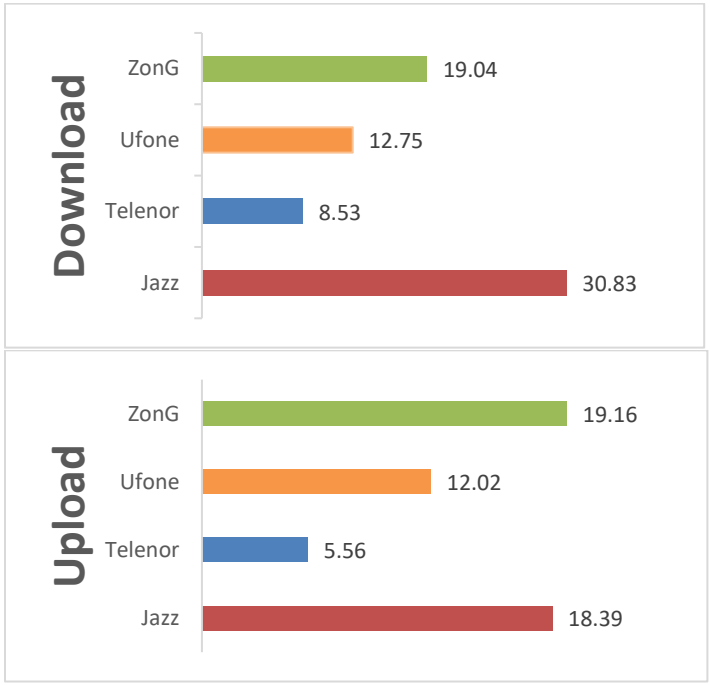
Non-compliant KPIs are highlighted in **Red**

City	Jazz			Telenor			Ufone			ZonG		
	Voice (%)	Data (%)	4G Coverage (%)	Voice (%)	Data (%)	4G Coverage (%)	Voice (%)	Data (%)	4G Coverage (%)	Voice (%)	Data (%)	4G Coverage (%)
Battagram	75	75	92.53	100	100	95.64	100	75	93.18	100	75	97.75
Besham	100	100	97.25	100	100	82.60	75	N/A	N/A	100	75	80.74
Buner	100	100	77.52	100	100	82.20	100	100	91.86	100	75	75.37
Chakwal	100	100	98.71	100	100	90.62	50	100	99.83	100	75	98.85
Dargai Town	100	100	93.80	75	75	99.40	75	100	99.00	100	75	96.60
Gwadar	0	50	92.60	75	75	92.37	100	100	96.88	100	75	97.74
Jalapur Pir Wala	100	100	99.68	100	75	N/A	100	75	96.88	100	100	N/A
Lodhran	100	100	98.49	100	75	80.33	100	100	98.45	100	100	99.43
Mingora	100	100	94.8	75	25	100.00	75	100	99.70	100	75	100.00
Matiari	100	100	95.71	100	75	94.30	100	75	97.69	75	75	100
Mirpurkhas	100	100	97.79	100	75	92.44	100	100	94.88	100	100	97.24
Mithi	100	100	94.77	100	50	97.77	100	100	96.86	100	75	69.43
Murree	100	75	86.67	50	75	72.19	75	75	99.57	50	75	99.24
Pindi Bhattain	100	100	98.76	100	75	86.77	100	100	96.69	100	75	85.51
Qambar	100	100	99	75	75	90	100	75	98	100	75	99
Quetta	100	100	98.88	100	75	95.09	25	100	97.31	75	75	97.59

Risalpur	100	100	91.75	75	100	78.96	50	75	78.50	100	100	90.86
Rawalpindi	100	100	96.02	100	75	93.16	100	100	99.29	75	75	96.45
Sambrial	100	100	94.30	75	75	80.80	100	100	94.90	100	100	94.10
Zafarwal Town	100	100	99.40	100	100	92.80	100	100	97.80	100	100	96.10

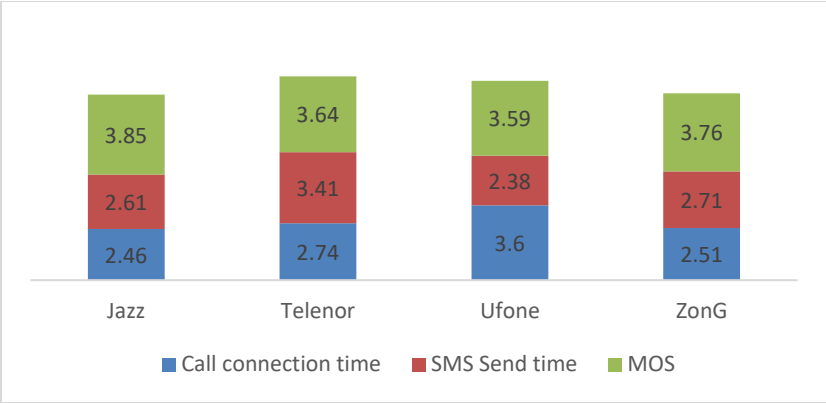
Voice compliance is the collective compliance of 4x KPIs i.e. MOS, CCT, CSSR and CST.
Data compliance is the collective compliance of 4x KPIs i.e. Automode Download, Upload, Latency and Webpage Loading Time.

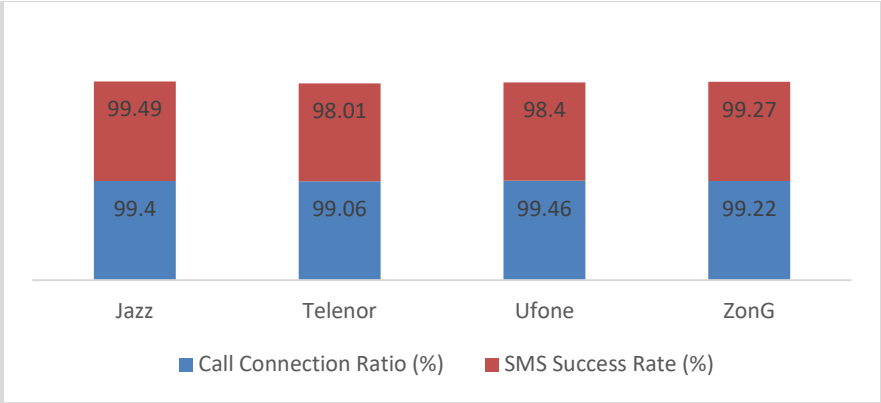
Average Status - Overall Cities



Latency (ms)

Jazz	116 ms
telenor	75 ms
ufone	81 ms
ZONG 4G	101 ms





2. RANKING

Based upon the compliance level of each KPI in surveyed cities against threshold defined in QoS Regulations, CMOs have been ranked between 1st to 4th position in Mobile Network Coverage, Mobile Broadband, Voice and SMS Services as shown below:

Cellular Mobile Operator	Coverage		Mobile Broadband							Voice	SMS
			Throughput				Latency		Browsing		
			Auto Mode		3rd Party App						
	3G	4G					Auto Mode	3rd Party App	Auto Mode		
ZONG 4G	2nd	3rd	2nd	1st	2nd	1st	4tb	1st	1st	2nd	2nd
Jazz	-	1st	1st	2nd	1st	2nd	1st	2nd	2nd	1st	1st
ufone 4G	2nd	2nd	3rd	3rd	3rd	4th	2nd	3rd	1st	4th	1st
telenor	1st	4th	4th	4th	4th	3rd	4th	2nd	3rd	3rd	3rd

Qualityof Service Survey

1. KEY PERFORMANCE INDICATORs (KPIs)

All CMOs are required to meet or exceed the benchmark of QoS KPIs as provided as per Cellular Mobile Network Quality of Service (QoS) Regulations 2021. To ensure accurate benchmarking, PTA is collecting and analyzing a statistically significant sample of minimum 200 calls and data sessions, enabling the evaluation of critical performance parameters.

2. SURVEY CITIES

Quality of Service Survey was conducted in 20x cities of Khyber Pakhtunkhwa, Punjab, Balochistan & Sindh of Pakistan during October to December 2025. Survey routes were selected in a manner to cover the maximum population area of the respective surveyed cities. The names of cities along with survey dates are mentioned in Table 1.1: QoS Survey Cities & Dates:

S. #.	City/Town	Province
1	Mingora	Khyber Pakhtunkhwa
2	Risalpur	
3	Dargai Town	
4	Battagram	
5	Besham	
6	Buner	
7	Rawalpindi	Punjab
8	Chakwal	
9	Zafarwal	
10	Sambrial	
11	Lodhran	
12	Jalapur Pirwala	
13	Pindi Bhattian	
14	Murree	
15	Mithi	Sindh
16	Mirpurkhas	
17	Matiari	
18	Qambar	
19	Gwadar	Balochistan
20	Quetta	

Table 1.1: QoS Survey Dates and Samples

3. TEST STATISTICS

During the survey, Quality of Services tests were conducted in the areas of Voice, Mobile Broadband (Throughput, Latency and Web Browsing) and Short Messaging Service (SMS). Service-wise tests conducted for each CMO are shown in Table 2.1: Test Statistics.

Service	Jazz	Telenor	Ufone	Zong
3rd Party App (Throughput + Latency)	25067	24554	24678	25332
Auto-mode (Throughput + Latency)	215780	192496	205979	216707
Webpage Loading	10066	8212	9671	11654
Voice Calls	5249	5465	5232	5890
SMS	5623	5618	5296	5197

Table 2.1: Test Statistics

4. NETWORK COVERAGE – 4G

During the survey, while conducting data test in technology auto detect mode, 4G/LTE signal strength samples were recorded on survey routes. City wise compliance of 90% Confidence Level of signal strength is shown in Table 4.1: 4G Signal Confidence Level- Technology Auto Detect Mode.

4G Signal Confidence Level- Technology Auto Detect Mode									
City	**Results**	Confidence Level (%)				Compliant (Yes/No)			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		92.53	95.64	93.18	97.75	Yes	Yes	Yes	Yes
Besham		97.25	82.60	N/A	80.74	Yes	**No**	N/A	**No**
Buner		77.52	82.20	91.86	75.37	No	**No**	Yes	**No**
Chakwal		98.71	90.62	99.83	98.85	Yes	Yes	Yes	Yes
Dargai Town		93.80	99.40	99.00	96.60	Yes	Yes	Yes	Yes
Gwadar		92.60	92.37	96.88	97.74	Yes	Yes	Yes	Yes
Jalapur Pirwala		99.68	N/A	96.88	N/A	Yes	N/A	Yes	N/A
Lodhran		98.49	80.33	98.45	99.43	Yes	**No**	Yes	Yes
Mingora		94.8	100.00	99.70	100.00	Yes	Yes	Yes	Yes
Matiari		95.71	94.30	97.69	100	Yes	Yes	Yes	Yes
Mirpurkhas		97.79	92.44	94.88	97.24	Yes	Yes	Yes	Yes
Mithi		94.77	97.77	96.86	69.43	Yes	Yes	Yes	**No**
Murree		86.67	72.19	99.57	99.24	**No**	**No**	Yes	Yes
Pindi Bhattain		98.76	86.77	96.69	85.51	Yes	**No**	Yes	**No**
Qambar		99	90	98	99	Yes	Yes	Yes	Yes
Quetta		98.88	95.09	97.31	97.59	Yes	Yes	Yes	Yes
Risalpur		91.75	78.96	78.50	90.86	Yes	**No**	**No**	Yes
Rawalpindi		96.02	93.16	99.29	96.45	Yes	Yes	Yes	Yes
Sambrial		94.30	80.80	94.90	94.10	Yes	**No**	Yes	Yes
Zafarwal Town		99.40	92.80	97.80	96.10	Yes	Yes	Yes	Yes
N/A indicates 4G services not available.(Threshold ≥ 90%)									

Table 4.1: 4G Signal Confidence Level 90%- Technology Auto Detect Mode

5. NETWORK COVERAGE – 3G

During the survey, 3G signal strength samples were also recorded on survey routes, wherever network switched to 3G while keeping the mobile handset in technology auto detect mode. City wise compliance of 90% Confidence Level of signal strength is shown in Table 5.1: 3G Signal Confidence Level - Technology Auto Detect Mode

3G Signal Confidence Level - Technology Auto Detect Mode									
City	**Results**	Confidence Level (%)				Compliant (Yes/No)			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		N/A	95.64	93.18	97.75	N/A	Yes	Yes	Yes
Besham		N/A	82.60	N/A	80.74	N/A	**No**	N/A	**No**
Buner		N/A	82.20	N/A	75.37	N/A	**No**	N/A	**No**
Chakwal		N/A	89.68	N/A	98.85	N/A	**No**	N/A	Yes
Dargai Town		N/A	99.40	N/A	96.60	N/A	Yes	N/A	Yes
Gwadar		N/A	92.37	N/A	97.29	N/A	Yes	N/A	Yes
Jalapur Pirwala		N/A	N/A	N/A	N/A	N/A	Yes	N/A	Yes
Lodhran		N/A	76.36	N/A	99.43	N/A	**No**	N/A	Yes
Mingora		N/A	100	99.70	100.00	N/A	Yes	Yes	Yes
Matiari		N/A	94.30	99	87.52	N/A	Yes	Yes	**No**
Mirpurkhas		N/A	92.44	94.88	97.24	N/A	Yes	Yes	Yes
Mithi		N/A	97.77	96.86	69.43	N/A	Yes	Yes	**No**
Murree		N/A	67.50	100	81.93	N/A	**No**	Yes	**No**
Pindi Bhattain		N/A	83.46	N/A	85.51	N/A	**No**	N/A	**No**
Qambar		N/A	90	98	99	N/A	Yes	Yes	Yes
Quetta		N/A	95.09	97.31	97.59	N/A	Yes	Yes	Yes
Risalpur		N/A	78.96	100	90.86	N/A	**No**	Yes	Yes
Rawalpindi		N/A	93.16	N/A	96.45	N/A	Yes	N/A	Yes
Sambrial		N/A	80.80	N/A	94.10	N/A	**No**	N/A	Yes
Zafarwal Town		N/A	92.80	N/A	96.10	N/A	Yes	N/A	Yes
N/A indicates services did not fall back to 3G and remained connected to 4G services. (Threshold ≥ 90%)									

Table 5.1: 3G Signal Confidence Level - Technology Auto Detect Mode

6. MOBILE BROADBAND SERVICE – DATA SPEED

Auto-mode Testing, to measure the performance of Mobile Broadband Services, Data Download and Upload tests were performed. During the test, a File of 10GB was downloaded and uploaded for 3 minutes duration. The Download and Upload Speed Results are shown in Table 6.1: Download Data Throughput and Table 6.2: Upload Data Throughput.

Download Data Throughput >4Mbps									
City	**Results**	Download Data Throughput [Mbps]				Operator Position			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		21.21	9.571	17.94	25.49	Second	Fourth	Third	First
Besham		25.18	5.05	N/A	58.74	Second	Third	N/A	First
Buner		29.57	4.98	10.70	13.75	First	Fourth	Third	Second
Chakwal		38.59	12.57	19.52	35.77	First	Fourth	Third	Second
Dargai Town		26.61	3.79	6.61	15.19	First	Fourth	Third	Second
Gwadar		16.51	10.78	11.91	16.07	First	Fourth	Third	Second
Jalapur Pirwala		24.97	7.55	16.35	19.78	First	Fourth	Third	Second
Lodhran		32.00	9.25	15.43	21.07	First	Fourth	Third	Second
Mingora		20.48	2.17	14.52	13.33	First	Fourth	Second	Third

Download Data Throughput >4Mbps								
Matiari	45.67	6.20	14.37	10.01	First	Fourth	Second	Third
Mirpurkhas	48.17	10.30	15.42	10.74	First	Fourth	Second	Third
Mithi	40.99	5.57	12.29	4.06	First	Third	Second	Fourth
Murree	26.96	12.81	14.00	26.10	First	Fourth	Third	Second
Pindi Bhattain	31.53	11.15	8.11	8.38	First	Second	Fourth	Third
Qambar	21.31	4.34	4.85	7.70	First	Fourth	Third	Second
Quetta	27.45	11.96	11.06	13.41	First	Third	Fourth	Second
Risalpur	21.94	6.61	6.73	9.82	First	Fourth	Third	Second
Rawalpindi	37.16	11.69	18.26	30.93	First	Fourth	Third	Second
Sambrial	37.09	5.96	11.85	10.84	First	Fourth	Second	Third
Zafarwal Town	43.27	18.424	12.34	29.77	First	Third	Fourth	Second

Table 6.1: DownloadData Throughput*(Threshold >4Mbps)*

Table 6.2: Upload Data Throughput*(Threshold >1Mbps)*

3rd Party Application. Upload and Download Throughputs were tested using a 3rd Party Network Testing Application. The Download and Upload Speed Results are shown in Table 6.3: Download Data Throughput and Table 6.4: Upload Data Throughput respectively

Upload Data Throughput ≥ 1Mbps									
City	**Results**	Upload Data Throughput [Mbps]				Operator Position			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		17.81	5.10	9.51	22.16	Second	Fourth	Third	First
Besham		18.24	3.13	N/A	24.60	Second	Third	N/A	First
Buner		12.34	4.14	9.14	13.56	Second	Fourth	Third	First
Chakwal		22.62	6.98	14.10	31.20	Second	Fourth	Third	First
Dargai Town		13.82	5.28	8.68	17.31	Second	Fourth	Third	First
Gwadar		5.41	7.99	12.51	20.08	Fourth	Third	Second	First
Jalapur Pirwala		15.81	4.78	12.26	6.73	First	Fourth	Second	Third
Lodhran		16.31	4.71	13.05	29.18	Second	Fourth	Third	First
Mingora		17.02	3.27	14.01	11.79	First	Fourth	Second	Third
Matiari		23.32	6.11	12.70	18.44	First	Fourth	Third	Second
Mirpurkhas		22.51	6.65	16.95	26.71	Second	Fourth	Third	First
Mithi		20.50	4.77	15.20	18.02	First	Fourth	Third	Second
Murree		14.89	6.56	10.06	16.78	Second	Fourth	Third	First
Pindi Bhattain		23.17	7.28	13.59	14.49	First	Fourth	Third	Second
Qambar		19.39	2.23	10.76	17.48	First	Fourth	Third	Second
Quetta		19.07	7.07	14.09	19.03	First	Fourth	Third	Second
Risalpur		19.85	5.28	9.21	12.50	First	Fourth	Third	Second
Rawalpindi		19.69	6.03	12.73	18.11	First	Fourth	Third	Second
Sambrial		21.16	5.19	10.03	24.24	Second	Fourth	Third	First
Zafarwal Town		24.89	8.7	9.82	20.93	Second	Fourth	Third	First

3rd Party App Download Data Throughput >4Mbps									
City	**Results**	Download Data Throughput [Mbps]				Operator Position			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		31.67	6.18	34.35	39.92	Third	Fourth	Second	First
Besham		35.76	7.30	N/A	72.27	Second	Third	N/A	First
Buner		56.31	34.45	7.35	20.18	First	Second	Fourth	Third

3rd Party App Download Data Throughput >4Mbps								
Chakwal	54.04	14.35	28.39	57.29	Second	Fourth	Third	First
Dargai Town	40.28	5.30	12.51	24.68	First	Fourth	Third	Second
Gwadar	48.07	10.33	14.57	44.53	First	Fourth	Third	Second
Jalapur Pirwala	36.67	11.12	36.52	52.93	Second	Fourth	Third	First
Lodhran	44.06	15.82	25.86	47.72	Second	Fourth	Third	First
Mingora	27.91	2.77	27.59	22.72	First	Fourth	Second	Third
Matiari	59.24	9.17	14.59	53.74	First	Fourth	Third	Second
Mirpurkhas	56.31	14.46	18.39	52.54	First	Fourth	Third	Second
Mithi	47.54	8.51	14.46	41.60	First	Fourth	Third	Second
Murree	36.90	13.44	21.36	43.40	Second	Fourth	Third	First
Pindi Bhattain	42.16	12.36	31.96	40.67	First	Fourth	Third	Second
Qambar	26.96	5.96	13.28	21.67	First	Fourth	Third	Second
Quetta	33.17	21.91	21.12	24.01	First	Third	Fourth	Second
Risalpur	28.98	9.36	11.36	23.07	First	Fourth	Third	Second
Rawalpindi	48.63	13.62	29.66	35.30	First	Fourth	Third	Second
Sambrial	44.55	7.74	25.05	43.52	First	Fourth	Third	Second
Zafarwal Town	51.67	25.36	32.646	52.98	Second	Fourth	Third	First

Table 6.3: 3rd Party App Download Data Throughput*(Threshold >4Mbps)*

3rd Party App Upload Data Throughput ≥ 1Mbps								
City	**Results**	Upload Data Throughput [Mbps]				Operator Position			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		19.18	5.10	14.56	32.57	Second	Fourth	Third	First
Besham		18.99	3.44	N/A	30.72	Second	Fourth	N/A	First
Buner		13.04	16.80	4.90	10.11	Second	First	Fourth	Third
Chakwal		23.52	7.69	15.07	37.12	Second	Fourth	Third	First
Dargai Town		15.20	5.87	15.47	21.22	Third	Fourth	Second	First
Gwadar		6.40	7.44	13.69	28.88	Fourth	Third	Second	First
Jalapur Pirwala		17.03	8.75	14.04	36.49	Second	Fourth	Third	First
Lodhran		18.84	4.32	12.82	35.90	Second	Fourth	Third	First
Mingora		26.28	3.12	19.67	17.61	First	Fourth	Second	Third
Matiari		21.57	6.05	12.54	31.17	Second	Fourth	Third	First
Mirpurkhas		22.59	7.68	19.09	35.79	Second	Fourth	Third	First
Mithi		23.86	5.20	16.91	24.36	Second	Fourth	Third	First
Murree		16.10	7.20	15.44	23.42	Second	Fourth	Third	First
Pindi Bhattain		28.57	6.44	17.07	19.20	First	Fourth	Third	Second
Qambar		20.93	2.39	9.67	24.30	Second	Fourth	Third	First
Quetta		12.86	8.67	9.09	17.55	Second	Fourth	Third	First
Risalpur		23.28	7.13	11.16	13.37	First	Fourth	Third	Second
Rawalpindi		21.18	6.09	13.96	23.91	Second	Fourth	Third	First
Sambrial		19.06	5.32	12.15	26.91	Second	Fourth	Third	First
Zafarwal Town		26.67	10.24	13.94	24.31	First	Fourth	Third	Second

Table 6.4: 3rd Party App Upload Data Throughput*(Threshold >1Mbps)*

7. MOBILE BROADBAND SERVICE – LATENCY

Latency, while not a traditional KPI (non-service KPI), is a vital metric for Mobile Broadband Performance, as it directly affects user experience. During the survey, Network Latency was measured by calculating the ping between different websites and 3rd Party Test servers. Results are shown in Table 7.1: Auto-mode Latency and Table 7.2: 3rd Party App Latency.

Latency In Auto-mode Testing									
City	**Results**	Latency [milliseconds]				Compliant (Yes/No)			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		96.54	44.79	90.79	97.78	**No**	Yes	**No**	**No**
Besham		69.25	71.88	N/A	355.05	Yes	Yes	N/A	**No**
Buner		72.45	55.41	66.53	85.97	Yes	Yes	Yes	**No**
Chakwal		48.13	63.69	39.07	77.60	Yes	Yes	Yes	**No**
Dargai Town		54.62	52.69	56.46	88.22	Yes	Yes	Yes	**No**
Gwadar		1264.00	170.00	63.00	95.00	**No**	**No**	Yes	**No**
Jalapur Pirwala		55.00	N/A	112.00	40	Yes	**No**	**No**	Yes
Lodhran		56.75	121.49	62.75	36.16	Yes	**No**	Yes	Yes
Mingora		58.00	131.00	67.00	91.00	Yes	**No**	Yes	**No**
Matiari		42	24	112	85	Yes	Yes	**No**	**No**
Mirpurkhas		36.67	45.46	39.93	57.18	Yes	Yes	Yes	Yes
Mithi		34.22	138.02	53.27	185.85	Yes	**No**	Yes	**No**
Murree		79.92	57.77	75.71	168.85	**No**	Yes	**No**	**No**
Pindi Bhattain		54	38	47	79	Yes	Yes	Yes	**No**
Qambar		48.09	90.07	154.58	149.91	Yes	**No**	**No**	**No**
Quetta		46.84	122.29	67	87.61	Yes	**No**	Yes	**No**
Risalpur		47.27	54.04	287.52	53.49	Yes	Yes	**No**	Yes
Rawalpindi		40.80	44.23	40.69	114.93	Yes	Yes	Yes	**No**
Sambrial		65.19	69.18	53.65	47.56	Yes	Yes	Yes	Yes
Zafarwal Town		64.00	39.00	52.00	33.00	Yes	Yes	Yes	Yes

Table 7.1: Auto-mode Latency*(Threshold <75ms)*

Latency in 3rd Party App Testing									
City	**Results**	Latency [milliseconds]				Compliant (Yes/No)			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		27.74	30.57	44.53	23.26	Yes	Yes	Yes	Yes
Besham		31.58	43.95	N/A	27.83	Yes	Yes	**No**	Yes
Buner		0.78	3.90	5.27	1.38	Yes	Yes	Yes	Yes
Chakwal		30.21	34.39	32.53	28.62	Yes	Yes	Yes	Yes
Dargai Town		30.55	46.90	33.38	26.08	Yes	Yes	Yes	Yes
Gwadar		658.00	39.78	38.61	38.13	**No**	Yes	Yes	Yes
Jalapur Pirwala		29.33	55.77	71.45	21.87	Yes	Yes	Yes	Yes
Lodhran		33.08	63.22	70.65	20.23	Yes	Yes	Yes	Yes
Mingora		31.68	79.62	33.55	24.30	Yes	**No**	Yes	Yes
Matiari		26.76	23.80	25.29	33.87	Yes	Yes	Yes	Yes
Mirpurkhas		24.40	31.86	25.03	24.63	Yes	Yes	Yes	Yes
Mithi		29.71	38.50	30.36	35.13	Yes	Yes	Yes	Yes
Murree		24.17	30.65	24.88	17.23	Yes	Yes	Yes	Yes
Pindi Bhattain		33.16	48.53	45.47	20.83	Yes	Yes	Yes	Yes
Qambar		32.68	55.68	141.50	37.64	Yes	Yes	**No**	Yes
Quetta		30.71	49.00	81.57	29.75	Yes	Yes	**No**	Yes
Risalpur		28.71	32.51	29.60	24.52	Yes	Yes	Yes	Yes
Rawalpindi		22.35	37.71	25.49	22.24	Yes	Yes	Yes	Yes
Sambrial		33.22	37.07	42.15	19.09	Yes	Yes	Yes	Yes
Zafarwal Town		48.20	26.41	38.44	22.47	Yes	Yes	Yes	Yes

Table 7.2: 3rd Party App Latency*(Threshold <75ms)*

8. MOBILE BROADBAND SERVICE – WEB PAGE LOADING

Web Page Loading Time is an important Quality of Experience (QoE) metric, which, although not a traditional service KPI (non-service), provides valuable insights into the performance of CMOs in delivering seamless web browsing experiences. Results of testing are shown in Table 8.1: Web Page Loading Time.

Webpage Loading Time in Technology Auto Detect Mode									
City	**Results**	Webpage Loading Time [seconds]				Compliant (Yes/No)			
		Jazz	**Telenor**	**Ufone**	**ZonG**	**Jazz**	**Telenor**	**Ufone**	**ZonG**
Battagram		2.54	0.71	0.74	0.12	Yes	Yes	Yes	Yes
Besham		2.44	1.16	N/A	1.94	Yes	Yes	N/A	Yes
Buner		2.11	0.84	1.02	0.13	Yes	Yes	Yes	Yes
Chakwal		1.65	4.35	0.75	0.12	Yes	Yes	Yes	Yes
Dargai Town		1.34	5.80	0.89	0.21	Yes	**No**	Yes	Yes
Gwadar		8.62	3.80	0.8	0.15	**No**	Yes	Yes	Yes
Jalapur Pirwala		2.27	4.68	0.78	0.06	Yes	Yes	Yes	Yes
Lodhran		2.31	3.77	0.56	0.09	Yes	Yes	Yes	Yes
Mingora		2.20	6.60	0.80	0.10	Yes	**No**	Yes	Yes
Matiari		2.04	5.26	0.46	0.12	Yes	**No**	Yes	Yes
Mirpurkhas		1.93	5.27	0.49	0.14	Yes	**No**	Yes	Yes
Mithi		2.01	5.67	0.55	0.19	Yes	**No**	Yes	Yes
Murree		1.98	5.34	0.71	0.19	Yes	**No**	Yes	Yes
Pindi Bhattain		2.4	5.9	0.6	0.1	Yes	**No**	Yes	Yes
Qambar		2.42	1.13	1.70	0.38	Yes	Yes	Yes	Yes
Quetta		2.45	6.11	0.83	0.29	Yes	**No**	Yes	Yes
Risalpur		1.30	4.71	0.73	0.14	Yes	Yes	Yes	Yes
Rawalpindi		1.91	6.02	0.64	0.18	Yes	**No**	Yes	Yes
Sambrial		2.74	5.05	0.61	0.10	Yes	**No**	Yes	Yes
Zafarwal Town		2.45	3.27	0.52	0.13	Yes	Yes	Yes	Yes

Table 8.1: Web Page Loading Time*(Threshold <5s)*

9. VOICE SERVICE

5 x QoS KPIs (i.e. Network Accessibility, Call Setup Success Rate, Call Setup Time, Call Completion Rate and Mean Opinion Score) have been measured while testing voice services in the surveyed cities. Compliance in each surveyed city is shown in Table 9.1: Voice QoS KPIs Compliance Level, Table 9.2: Voice QoS KPIs Compliance Level, Table 9.3: Voice QoS KPIs Compliance Level, Table 9.4: Voice QoS KPIs Compliance Level & Table 9.4: Voice QoS KPIs Compliance Level

CMO	KPI	Battagram	Besham	Buner	Chakwal	Dargai Town
Jazz	NA	100	100.00	99.50	100.00	100.00
	CSSR	99.60	100.00	100.00	99.81	99.17
	CCT	1.80	1.81	2.00	1.80	1.84
	CCR	97.61	100.00	100.00	100.00	99.58%
	MOS	3.68	4.01	3.96	4.02	4.05
Telenor	NA	100.00	100.00	100.00	99.99	100.00
	CSSR	98.02	98.27	98.27	99.62	97.48
	CCT	2.80	2.79	3.00	2.74	2.77

CMO	KPI	Battagram	Besham	Buner	Chakwal	Dargai Town
	CCR	98.79	99.54	97.97	99.43	99.57
	MOS	3.54	3.56	3.62	3.65	3.84
Ufone	NA	100.00	100.00	100.00	100.00	99.84
	CSSR	99.60	86.30	99.21	97.72	97.54
	CCT	2.00	6.82	2.00	2.02	7.4
	CCR	100.00	100.00	98.81	97.67	100.00
	MOS	3.84	3.32	3.75	3.73	3.39
ZonG	NA	100.00	100.00	100.00	100.00	100
	CSSR	99.20	100.00	100.00	100.00	99.55
	CCT	1.70	2.39	2.00	1.68	6.12
	CCR	95.55	100.00	99.19	99.81	99.55
	MOS	3.82	3.67	3.81	3.97	3.62

Table 9.1: Voice QoS KPIs Compliance Level

CMO	KPI	Gwadar	Jalapur Pirwala	Lodhran	Mingora	Matiari
Jazz	NA	81.30	100.00	100.00	100.00	100.00
	CSSR	79.00	99.64	98.81	99.72	99.04
	CCT	11.80	2.23	2.10	1.86	1.99
	CCR	97.18	100.00	100.00	99.72	99.51
	MOS	2.62	3.94	3.94	3.95	3.81
Telenor	NA	85.39	100.00	100.00	100.00	100.00
	CSSR	84.60	100.00	99.70	97.18	98.10
	CCT	3.90	1.90	2.15	3.33	1.73
	CCR	99.12	100.00	99.70	99.71	100.00
	MOS	3.46	3.84	3.39	3.44	3.96
Ufone	NA	100.00	100.00	100.00	99.93	100.00
	CSSR	100.00	100.00	100.00	100.00	99.04
	CCT	1.70	1.99	1.70	8.13	1.98
	CCR	100.00	99.64	100.00	99.73	100.00
	MOS	3.70	3.87	3.84	3.19	3.82
ZonG	NA	100.00	99.28	100.00	100.00	100.00
	CSSR	100.00	100.00%	99.70	99.44	96.63
	CCT	1.90	2.44	2.54	2.53	2.45
	CCR	100.00	100.00	100.00	99.44	99.50
	MOS	3.70	4.04	4.00	3.82	3.54

Table 9.2: Voice QoS KPIs Compliance Level

CMO	KPI	Mirpurkhas	Mithi	Murree	Pindi Bhattian	Qambar
Jazz	NA	100.00	100.00	99.94	100.00	100.00
	CSSR	99.59	100.00	99.06	100.00	98.65
	CCT	1.78	2.03	1.99	1.78	2.56
	CCR	100.00	100.00	98.87	99.50	98.66
	MOS	4.02	3.98	3.80	3.97	4.04
Telenor	NA	100.00	100.00	99.71	100	97.18
	CSSR	98.33	98.58	95.79	99.50	96.15
	CCT	2.30	1.89	3.41	2.77	2.60
	CCR	98.30	100.00	95.20	98.99	98.94
	MOS	3.59	3.70	3.57	3.78	3.74
Ufone	NA	100.00	100.00	99.90	100.00	99.49
	CSSR	98.76	98.58	98.88	100.00	99.48

CMO	KPI	Mirpurkhas	Mithi	Murree	Pindi Bhattian	Qambar
	CCT	2.08	2.03	1.68	1.43	7.48
	CCR	98.33	100.00	97.92	100.00	100.00
	MOS	3.87	3.73	3.76	3.74	2.82
ZonG	NA	100.00	99.99	99.91	100.00	98.43
	CSSR	100.00	99.53	95.02	99.50	98.16
	CCT	2.31	4.05	2.42	2.49	2.27
	CCR	100.00	100.00	97.38	98.99	99.73
	MOS	3.91	3.15	3.79	3.80	3.48

Table 9.3: Voice QoS KPIs Compliance Level

CMO	KPI	Quetta	Risalpur	Rawalpindi	Sambrial	Zafarwal Town
Jazz	NA	100.00	100.00	100.00	100.00	100.00
	CSSR	100	100.00	99.56	99.75	98.98
	CCT	2.56	1.87	1.91	1.905	1.756
	CCR	99.42	99.66	100.00	99.75	98.63
	MOS	3.87	3.89	3.92	3.69	3.86
Telenor	NA	99.86	100.00	100.00	100.00	99.90
	CSSR	98.55	97.59	98.90	97.04	98.32
	CCT	2.82	3.11	2.95	2.895	3.041
	CCR	99.71	98.59	99.78	99.75	98.29
	MOS	3.58	3.68	3.61	3.58	3.69
Ufone	NA	99.98	99.82	100.00	100.00	100.00
	CSSR	97.38	96.90	99.35	98.52	100.00
	CCT	7.68	8.61	1.75	1.815	1.754
	CCR	98.80	98.93	99.78	99.75	100.00
	MOS	2.74	3.33	3.88	3.86	3.78
ZonG	NA	99.98	100.00	100.00	100.00	100.00
	CSSR	97.32	100.00	97.83	98.52	100.00
	CCT	2.32	2.26	2.10	1.814	2.539
	CCR	98.78	98.97	98.89	99.00	99.66
	MOS	3.75	3.89	3.83	3.83	3.82
** Note Voice QoS KPIs: Network Accessibility (NA >99%), Call Setup Success Rate (CSSR >=98%), Call Connection Time (CCT <=7.5), Call Completion Ratio (CCR> 98), Mean Opinion Score (MOS>=3) *Non-Compliant KPI's are highlighted*						

Table 9.4: Voice QoS KPIs Compliance Level

10. SMS SERVICE

2 x SMS QoS KPIs (i.e. Success Rate and Delivery Time) have been measured while testing SMS services in the surveyed cities.The compliance in each surveyed city is shown in Table 10.1: SMS QoS KPIs Compliance Level.

Operator	**Jazz**		**Telenor**		**Ufone**		**ZonG**	
SMS KPI	SR	DT	SR	DT	SR	DT	SR	DT
Battagram	99.60	2.50	98.78	3.40	99.60	2.10	100.00	2.20
Besham	100.00	2.39	98.29	3.27	80.6	9.24	99.58	3.91
Buner	98.02	2.61	98.40	3.39	99.61	2.46	98.41	2.85
Chakwal	99.81	2.45	99.62	3.32	99.05	2.33	99.8	2.50

Operator	Jazz		Telenor		Ufone		ZonG	
Dargai Town	97.03	2.29	98.31	3.44	99.16	1.87	99.55	2.19
Gwadar	99.63	5	90	3.8	99.63	2	100	2.6
Jalapur Pirwala	100.00	3.00	99.13	4	99	2	100.00	2
Lodhran	99.70	3	99.70	3	99.70	2	99.70	2
Mingora	99.72	2.46	98.31	3.35	100.00	1.53	100.00	2.46
Matiari	100.00	2.55	99.04	3.31	99.52	2.00	99.05	2.77
Mirpurkhas	99.58	2.50	99.5	3.74	99.16	1.98	100	2.71
Mithi	100	2.45	100	3.75	100	1.71	96.21	5.03
Murree	99.06	2.75	94.62	3.37	98.11	2.02	96.77	2.68
Pindi Bhattain	99.50	2.55	100.00	3.27	100.00	2.04	100.00	3.06
Qambar	100.00	2.73	94.59	3.61	99	1.84	99.74	2.84
Quetta	100	2.47	98.83	3.53	99.13	2.17	100	2.67
Risalpur	100.00	2.01	98.95	3.11	98.25	2.26	99.31	2.24
Rawalpindi	100.00	2.59	99.34	3.59	99.57	2.22	98.90	2.50
Sambrial	100.00	2	96.32	3	99.26	2	98.53	3
Zafarwal Town	98.32	2	98.66	3	99.67	2	100.00	2
**SMS QoS KPIs: Success Rate (SR=>99%), Delivery Time (DT<=12)*								

Table 10.1: SMS QoS KPIs Compliance Level

11. SURVEY STANDING - MOBILE NETWORK COVERAGE

The categorization of CMOs in Mobile Network Coverage i.e. Signal Strength of 4G/LTE and 3G Networks (in case of fallback) measured in Technology Auto Detect Mode is shown in Table 11.1: CMOs Standing in Mobile Network Coverage – Technology Auto Detect.

Ser.	Operator	Compliance Level – Number of Cities Technology Auto Detect Mode						Standing	
		Compliant			Non-Compliant				
		4G	3G	Total	4G	3G	Total	4G	3G
1.	Jazz	18	N/A	19	2	N/A	3	1st	N/A
2.	Telenor	12	10	22	8	1	9	4th	1st
3.	Ufone	17	8	25	3	2	5	2nd	2nd
4.	ZonG	13	8	21	7	4	11	3rd	2nd

Table 11.1: CMOs Standing in Mobile Network Coverage – Technology Auto Detect Mode

12. SURVEY STANDING - MOBILE BROADBAND SERVICE

The categorization of each CMOs in Mobile Broadband Service is as under:

i. Download Data Throughput (Auto Mode). The Download Data Throughput, as per the highest to lowest obtained results, is shown in Table 12.1: CMOs Standing in Download Data Throughput – Auto Mode Testing. (Note: Standings are based on Higher Technology)

S. #	Operator	Highest Download Throughput – Number of Cities (Auto-mode)				Standing
		1st	2nd	3rd	4th	
1.	Jazz	18	2	-	-	1st
2.	Telenor	-	1	4	15	4th
3.	Ufone	-	5	11	3	3rd
4.	ZonG	1	13	5	1	2nd

Table 12.1: CMOs Standing in Download Data Throughput– Auto Mode Testing

ii. Upload Data Throughput (Auto Mode). The Upload Data Throughput, as per the highest to lowest obtained results, is shown in Table 12.2: CMOs Standing in Upload Data Throughput – Auto Mode Testing.

S. #	Operator	Highest Upload Throughput – Number of Cities(Auto-mode)				Standing
		1st	2nd	3rd	4th	
1.	Jazz	9	10	-	1	2nd
2.	Telenor	-	-	2	18	4th
3.	Ufone	-	2	17	-	3rd
4.	ZonG	12	7	1	-	1st

Table 12.2: CMOs Standing in Download Data Throughput– Auto Mode Testing

iii. Webpage Loading Time. The categorization of each CMOs, as per the maximum compliant of Webpage Loading Time, is shown in Table 12.3: CMOs Standing in Webpage Loading Time.

S. #	Operator	Webpage Loading Time – Number of Cities		Standing
		Compliant	Non-Compliant	
1.	Jazz	19	1	2nd
2.	Telenor	10	10	3rd
3.	Ufone	19	0	1st
4.	ZonG	20	0	1st

Table 12.3: CMOs Standing in Webpage Loading Time

iv. Latency (3rd Party App). The categorization of each CMOs, as per the maximum compliant of cities in terms of Latency, is shown in Table 12.4: CMOs Standing in Latency (3rd Party App).

S. #	Operator	Latency - Number of Cities			Standing
		Compliant	Non-Compliant		
1.	Jazz	19	1		2nd
2.	Telenor	19	1		2nd
3.	Ufone	18	2		3rd
4.	ZonG	20	0		1st

Table 12.4: CMOs Standing in Latency (3rd Party App)

v. Latency (Auto-mode). The categorization of each CMOs, as per the maximum compliant of cities in terms of Latency, is shown in Table 12.5: CMOs Standing in Latency (Auto-mode).

S. #	Operator	Latency - Number of Cities		Standing
		Compliant	Non-Compliant	
1.	Jazz	17	3	1st
2.	Telenor	13	7	3rd
3.	Ufone	14	6	2nd
4.	ZonG	6	14	4th

Table 12.5: CMOs Standing in Latency (Auto-mode)

vi. Download Data Throughput (3rd Party App). 3rdParty App Download Throughput, as per the highest to lowest obtained results, is shown in Table 12.6: CMOs Standing in Download Throughput – 3rd Party App.

S. #	Operator	Highest Download Throughput – Number of Cities				Standing
		1st	2nd	3rd	4th	
1.	Jazz	13	6	1	-	1st
2.	Telenor	-	1	1	17	4th
3.	Ufone	-	2	16	2	3rd
4.	ZonG	7	11	2	-	2nd

Table 12.6: CMOs Standing in Download Throughput – 3rd Party App

vii. Upload Data Throughput (3rd Party App). 3rd Party App Upload Throughput, as per the highest to lowest obtained results, is shown in Table 12.7: CMOs Standing in Upload Throughput – 3rd Party App.

S. #	Operator	Highest Upload Throughput – Number of Cities				Standing
		1st	2nd	3rd	4th	
1.	Jazz	4	14	1	-	2nd
2.	Telenor	1	-	1	18	3rd
3.	Ufone	-	3	16	1	4th
4.	ZonG	15	3	2	-	1st

Table 12.7: CMOs Standing in Upload Throughput – 3rd Party App

13. SURVEY STANDING – VOICE & SMS SERVICE

The categorization of each CMOs, as per the maximum compliant of Voice and SMS QoS KPIs are shown in (i) Table 13.1: CMOs Standing in Voice Service& (ii) Table 13.2: CMOs Standing in SMS.

S.#	Operator	Voice QoS KPIs		Standing
		Compliant	Non-Compliant	
1.	Jazz	94	6	1st
2.	Telenor	91	9	3rd
3.	Ufone	89	11	4th
4.	ZonG	93	7	2nd

Table 13.1: CMOs Standing in Voice Service

S. #	Operator	SMS QoS KPIs		Standing
		Compliant	Non-Compliant	
1.	Jazz	37	3	1st
2.	Telenor	28	12	3rd
3.	Ufone	37	3	1st
4.	ZonG	35	5	2nd

Table 13.2: CMOs Standing in SMS Service

S. #.	Service			STANDING			
				1st	2nd	3rd	4th
1.	Mobile Network Coverage 4G			Jazz	Ufone	ZonG	Telenor
2.	Mobile Broadband	Auto Mode	Download	Jazz	ZonG	Ufone	Telenor
			Upload	ZonG	Jazz	Ufone	Telenor
		3rd Party App	Download	Jazz	ZonG	Ufone	Telenor
			Upload	ZonG	Jazz	Telenor	Ufone
		Web Page Loading Time		ZonG, Ufone	Jazz	Telenor	-
		Latency	Auto-mode	Jazz	Ufone	Telenor,	ZonG
			3rd Party App	ZonG	Jazz, Telenor	Ufone	-
3.	Voice			Jazz	ZonG	Telenor	Ufone
4.	SMS			Jazz, Ufone	ZonG	Telenor	

Table 14.1: CMOs Overall Standing in QoS Survey