Independent Quality of Service Survey in Pakistan – Cities

First Quarter 2025

Enforcement Division
PTA | F-5/1, Islamabad

Executive Summary

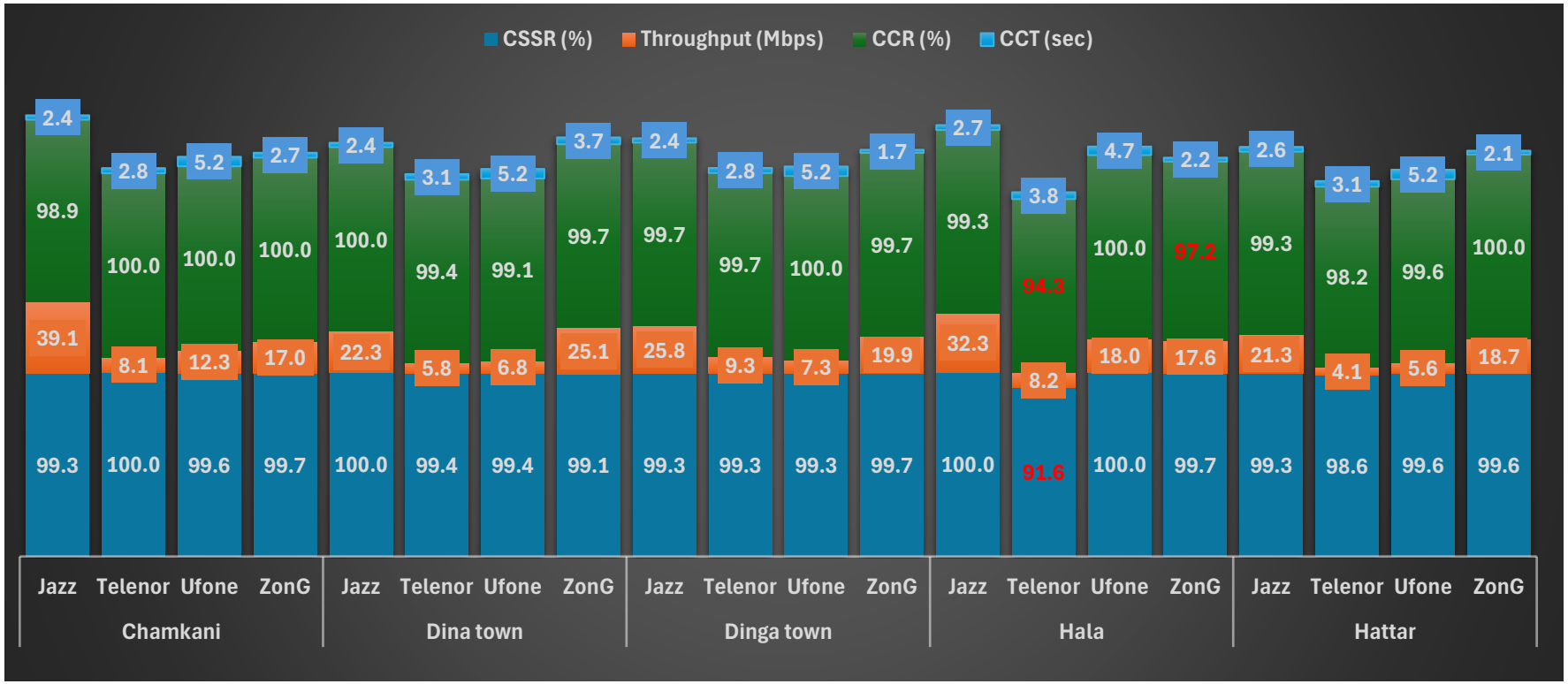
1. QUALITY OF SERVICE SURVEY

Pakistan Telecommunication Authority (PTA) has carried out independent Quality of Service (QoS) Survey in various cities of Pakistan during 1st 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. The survey comprised approximately 35,500 Voice Calls and SMS while 0.255 million samples were checked to measure the broadband performance of CMOs. Summary of the drive, city wise and overall results are below:

2000 KMs Travelled

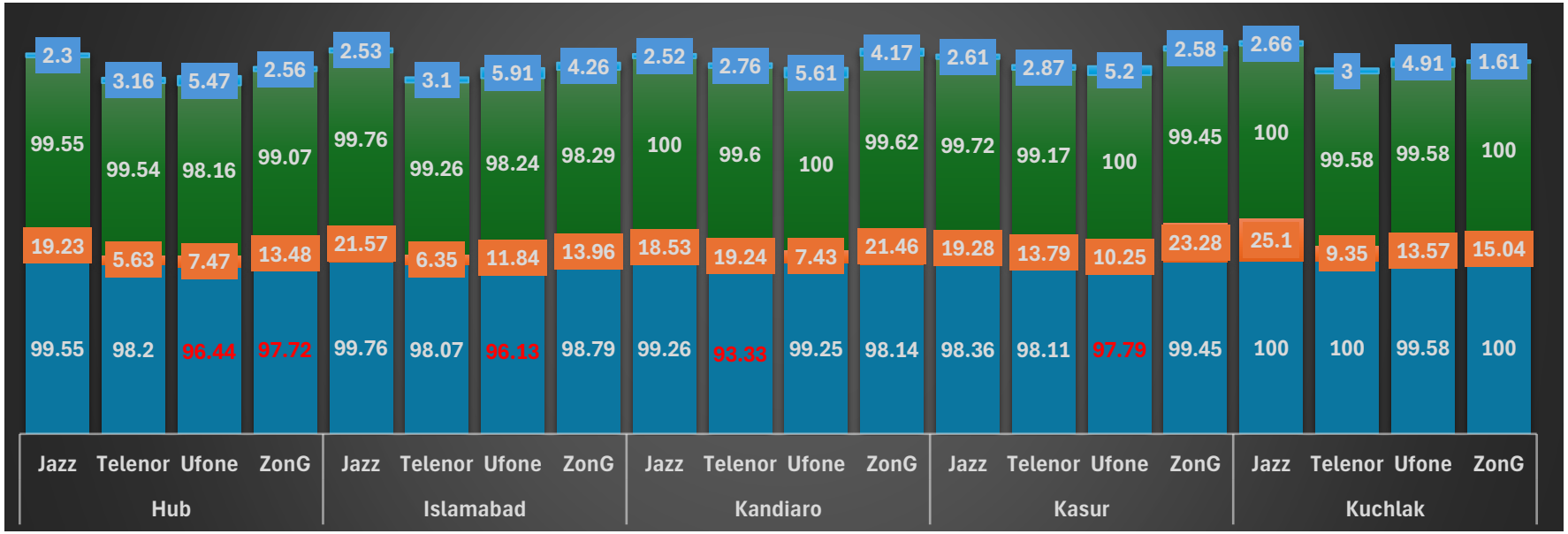
64 Days Survey

15 Cities Tested



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

Call Setup Success Rate (CSSR), Call Connection Time (CCT), Call Completion Ratio (CCR)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Jazz
Telenor
Ufone
ZonG
Hub
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Jazz
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Islamabad
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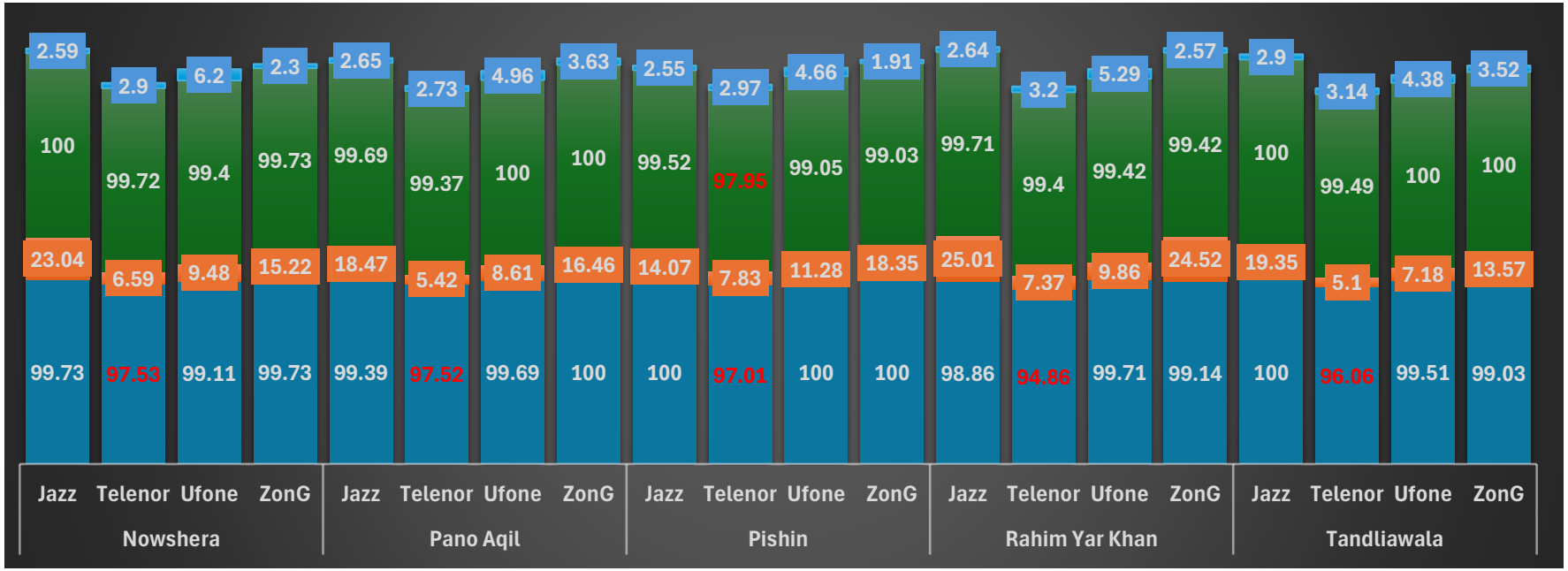
ZonG
Kuchlak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Pano Aqil
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Jazz
Telenor
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Pishin
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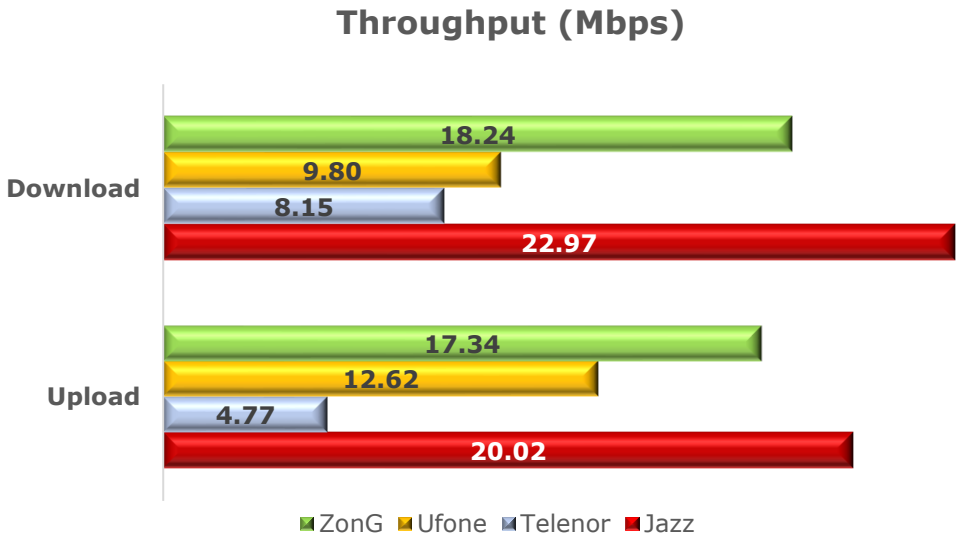
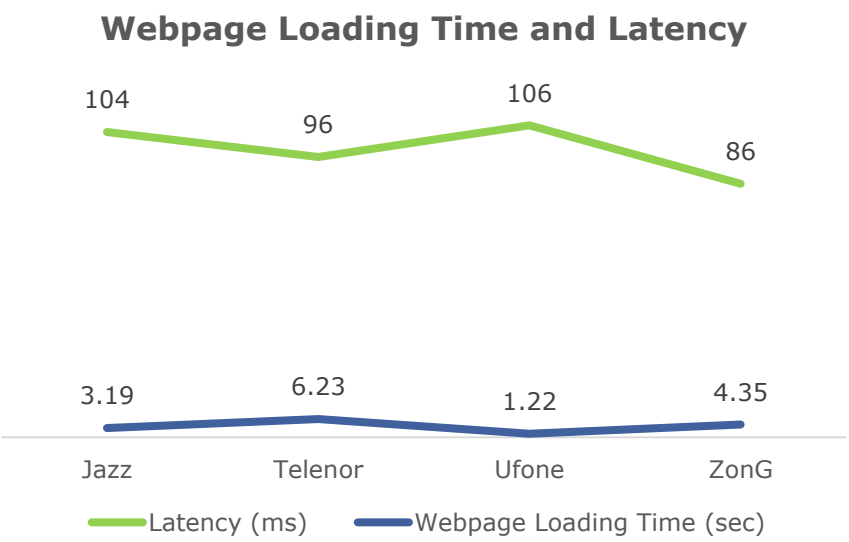
5.29
99.42
9.86
99.71
2.57
99.42
24.52
99.14
Jazz
Telenor
Ufone
ZonG
Rahim Yar Khan
2.9
100
19.35
100
3.14
99.49
5.1
96.06
4.38
100
7.18
99.51
3.52
100
13.57
99.03
Jazz
Telenor
Ufone
ZonG
Tandliawala

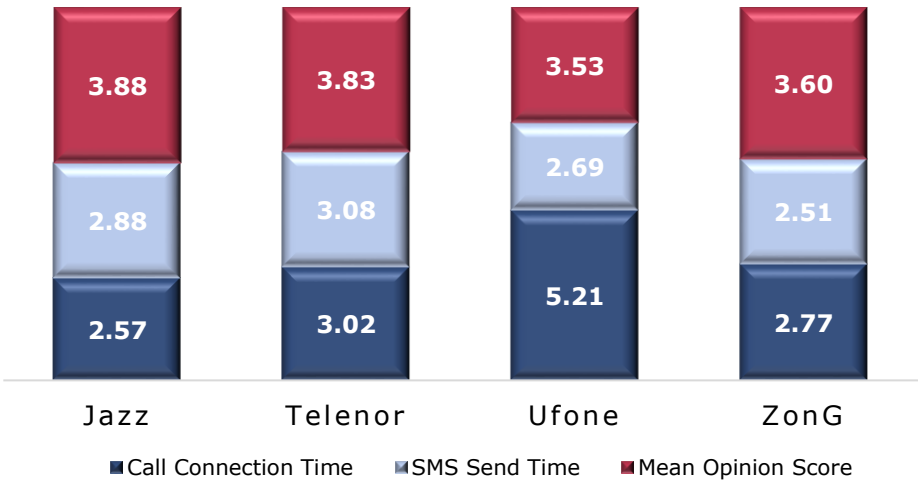
City	Jazz			Telenor			Ufone			ZonG		
	Voice (%)	Data (%)	4G Coverage (%)	Voice (%)	Data (%)	4G Coverage (%)	Voice (%)	Data (%)	4G Coverage (%)	Voice (%)	Data (%)	4G Coverage (%)
Dina town	100	75	87.79	100	75	91.03	100	100	96.73	100	100	97.3
Dinga town	100	75	97.89	100	75	94.73	100	75	98.63	100	75	94.47
Hub	100	75	98.91	100	50	92.49	75	75	98.75	75	75	98.64
Islamabad	100	75	98.32	100	75	94.64	75	100	99.21	100	75	98.05
Kandiaro	100	75	99.91	75	50	81.95	100	75	96.36	75	50	99.41
Nowshera	100	75	98.33	75	50	89.28	100	75	99.7	100	75	95.73
Rahim Yar Khan	100	75	99.3	75	50	87.53	100	75	98.39	100	100	98.2
Pano Aqil	100	75	95.58	75	50	92.98	100	75	49.73	100	75	97.02
Hala	100	75	99.16	50	50	72.87	100	75	99.71	75	75	94.14
Chamkani	100	100	91.86	100	75	99.64	100	75	100	100	50	97.57
Hattar	100	75	89.38	100	50	92.12	100	75	96.84	100	100	94.43
Kasur	100	75	95.85	100	75	77.86	75	75	87.93	100	100	95.03
Tandlianwala	100	75	99.62	75	50	98.34	100	75	98.34	100	75	98.31
Pishin	100	75	99.44	50	75	84.41	100	75	92.45	100	75	92.86
Kuchlak	100	75	97.22	100	50	75.05	100	75	92.41	100	75	98

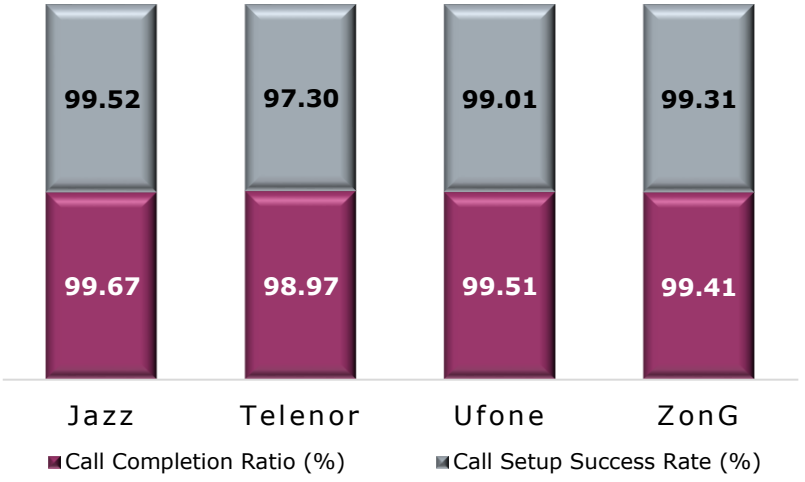
Voice compliance is the collective compliance of 4x KPIs i.e. Mean Opinion Score, Call Completion Ratio, Call Setup Succes Rate and Call Connection Time. Data compliance is the collective compliance of 4x KPIs i.e. Automode Download, Upload, Latency and Webpage Loading Time.

Average Status - Overall Cities









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		Auto Mode	3rd Party App	Auto Mode		
		↓	↑	↓	↑					
Jazz	2nd	1st	1st	2nd	2nd	4th	1st	1st	1st	3rd
Zong 4G	1st	2nd	2nd	1st	1st	2nd	2nd	3rd	2nd	1st
Ufone 4G	3rd	3rd	3rd	3rd	3rd	3rd	2nd	2nd	2nd	1st
telenor	4th	4th	4th	4th	4th	1st	2nd	4th	3rd	2nd

Quality of 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 15x cities of Khyber Pakhtunkhwa, Punjab, Sindh & Balochistan during January to March 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	Nowshera	Khyber Pakhtunkhwa
2	Chamkani	
3	Hattar Town	
4	Dina Town	Punjab
5	Dinga Town	
6	Islamabad	
7	Kasur	
8	Rahim Yar khan	
9	Tandlianwala	
10	Pishin	Balochistan
11	Kuchlak	
12	Hub	Sindh
13	Kandiaro	
14	Pano Aqil	
15	Hala	

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	ZonG	Telenor	Ufone
3rd Party App (Throughput + Latency)	30213	28533	28605	29808
Automode (Throughput + Latency)	25608	22011	24385	25105
Webpage Loading	11010	9155	10552	10681
Voice Calls	4450	4434	4410	4462
SMS	4445	4427	4412	4468

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	Confidence Level (%)				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	**87.79**	91.03	96.73	97.30	**No**	Yes	Yes	Yes
Dinga town	97.89	94.73	98.63	94.47	Yes	Yes	Yes	Yes
Hub	98.91	92.49	98.75	98.64	Yes	Yes	Yes	Yes
Islamabad	98.32	94.64	99.21	98.05	Yes	Yes	Yes	Yes
Kandiaro	99.91	**81.95**	96.36	99.41	Yes	**No**	Yes	Yes
Nowshera	98.33	**89.28**	99.70	95.73	Yes	**No**	Yes	Yes
Rahim Yar Khan	99.30	**87.53**	98.39	98.20	Yes	**No**	Yes	Yes
Pano Aqil	95.58	92.98	**49.73**	97.02	Yes	Yes	**No**	Yes
Hala	99.16	**72.87**	99.71	94.14	Yes	**No**	Yes	Yes
Chamkani	91.86	99.64	100	97.57	Yes	Yes	Yes	Yes
Hattar	**89.38**	92.12	96.84	94.43	**No**	Yes	Yes	Yes
Kasur	95.85	**77.86**	**87.93**	95.03	Yes	**No**	**No**	Yes
Tandlianwala	99.62	98.34	98.34	98.31	Yes	Yes	Yes	Yes
Pishin	99.44	**84.41**	92.45	92.86	Yes	**No**	Yes	Yes
Kuchlak	97.22	**75.05**	92.41	98.00	Yes	**No**	Yes	Yes
N/A indicates 4G services not available.								

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	Confidence Level (%)				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dinga town	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hub	N/A	N/A	100	100	N/A	N/A	Yes	Yes
Islamabad	N/A	100	91.2	100	N/A	Yes	Yes	Yes
Kandiaro	N/A	100	100	N/A	N/A	Yes	Yes	N/A
Nowshera	N/A	N/A	100	N/A	N/A	N/A	Yes	N/A
Rahim Yar Khan	N/A	100	N/A	100	N/A	Yes	N/A	Yes
Pano Aqil	N/A	N/A	100	N/A	N/A	N/A	Yes	N/A
Hala	N/A	97.93	100	N/A	N/A	Yes	Yes	N/A

3G Signal Confidence Level - Technology Auto Detect Mode								
Chamkani	N/A	N/A	100	N/A	N/A	N/A	Yes	N/A
Hattar	N/A	100	99.82	100	N/A	Yes	Yes	Yes
Kasur	N/A	N/A	**24.71**	N/A	N/A	N/A	**No**	N/A
Tandlianwala	N/A	100	N/A	N/A	N/A	Yes	N/A	N/A
Pishin	N/A	N/A	100	N/A	N/A	N/A	Yes	N/A
Kuchlak	NA	100	99.97	NA	N/A	Yes	Yes	N/A
N/A indicates services did not fallback to 3G and remained connected to 4G services.								

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

6. MOBILE BROADBAND SERVICE – DATA SPEED

Automode Testing. In order 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	Download Data Throughput [Mbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	22.33	5.84	6.79	25.08	Second	Fourth	Third	First
Dinga town	25.84	9.32	7.33	19.91	First	Third	Fourth	Second
Hub	19.23	5.63	7.47	13.48	First	Fourth	Third	Second
Islamabad	21.57	6.35	11.84	13.96	First	Fourth	Third	Second
Kandiaro	18.53	19.24	7.43	21.46	Third	Second	Fourth	First
Nowshera	23.04	6.59	9.48	15.22	First	Fourth	Third	Second
Rahim Yar Khan	25.01	7.37	9.86	24.52	First	Fourth	Third	Second
Pano Aqil	18.47	5.42	8.61	16.46	First	Fourth	Third	Second
Hala	32.32	8.23	18.00	17.60	First	Fourth	Second	Third
Chamkani	39.06	8.14	12.29	16.98	First	Fourth	Third	Second
Hattar	21.31	4.09	5.59	18.68	First	Fourth	Third	Second
Kasur	19.28	13.79	10.25	23.28	Second	Third	Fourth	First
Tandlianwala	19.35	5.10	7.18	13.57	First	Fourth	Third	Second
Pishin	14.07	7.83	11.28	18.35	Second	Fourth	Third	First
Kuchlak	25.10	9.35	13.57	15.04	First	Fourth	Third	Second

Table 6.1: Download Data Throughput

Upload Data Throughput ≥ 1Mbps								
City	Upload Data Throughput [Mbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	16.39	5.75	12.31	20.59	Second	Fourth	Third	First
Dinga town	24.67	7.03	13.96	24.13	First	Fourth	Third	Second
Hub	24.55	3.28	13.24	13.73	First	Fourth	Third	Second
Islamabad	17.56	5.55	15.11	11.61	First	Fourth	Second	Third
Kandiaro	21.62	6.17	13.98	19.82	First	Fourth	Third	Second
Nowshera	17.89	5.22	13.29	14.75	First	Fourth	Third	Second
Rahim Yar Khan	17.95	3.94	14.09	22.41	Second	Fourth	Third	First
Pano Aqil	14.37	3.65	7.80	17.63	Second	Fourth	Third	First
Hala	24.04	3.40	13.99	16.86	First	Fourth	Third	Second
Chamkani	24.08	5.27	15.14	11.68	First	Fourth	Second	Third
Hattar	18.24	5.06	11.20	18.09	First	Fourth	Third	Second
Kasur	17.00	7.70	13.32	17.23	Second	Fourth	Third	First
Tandiawala	22.19	2.73	11.61	22.41	Second	Fourth	Third	First
Pishin	16.39	2.51	10.21	14.51	First	Fourth	Third	Second
Kuchlak	23.29	4.32	10.12	14.68	First	Fourth	Third	Second

Table 6.2: Upload Data Throughput

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.

3rd Party App Download Data Throughput >4Mbps								
City	Download Data Throughput [Mbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	30.13	5.39	10.81	40.36	Second	Fourth	Third	First
Dinga town	31.02	7.47	8.56	32.50	Second	Fourth	Third	First
Hub	28.37	6.83	10.24	28.43	Second	Fourth	Third	First
Islamabad	29.84	5.33	10.18	25.99	First	Fourth	Third	Second
Kandiaro	24.88	23.14	9.68	36.02	Second	Third	Fourth	First
Nowshera	21.50	5.26	9.17	20.61	First	Fourth	Third	Second
Rahim Yar Khan	35.97	10.61	16.84	39.59	Second	Fourth	Third	First
Pano Aqil	25.72	6.43	11.56	28.25	Second	Fourth	Third	First
Hala	44.96	7.14	23.39	26.67	First	Fourth	Third	Second
Chamkani	46.27	8.90	15.51	29.14	First	Fourth	Third	Second
Hattar	24.10	4.00	8.45	28.07	Second	Fourth	Third	First
Kasur	24.00	17.54	13.44	36.27	Second	Third	Fourth	First
Tandlianwala	22	7	10.22	33.04	Second	Fourth	Third	First
Pishin	27	8	15.37	39.15	Second	Fourth	Third	First
Kuchlak	39	8	11.67	18.26	First	Fourth	Third	Second

Table 6.3: 3rd Party App Download Data Throughput

3rd Party App Upload Data Throughput ≥ 1Mbps								
City	Upload Data Throughput [Mbps]				Operator Position			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	19.02	5.03	13.08	30.71	Second	Fourth	Third	First
Dinga town	29.54	6.78	11.80	25.87	First	Fourth	Third	Second
Hub	25.06	3.57	15.55	22.39	First	Fourth	Third	Second
Islamabad	19.53	5.20	9.07	18.04	First	Fourth	Third	Second
Kandiaro	24.59	5.52	15.32	31.33	Second	Fourth	Third	First
Nowshera	29.14	6.37	11.40	23.42	First	Fourth	Third	Second
Rahim Yar Khan	24.12	4.06	18.43	30.78	Second	Fourth	Third	First
Pano Aqil	12.97	2.64	9.48	24.51	Second	Fourth	Third	First
Hala	29.12	2.35	20.81	19.23	First	Fourth	Second	Third
Chamkani	27.25	4.73	12.71	23.01	First	Fourth	Third	Second
Hattar	20.58	3.78	6.87	23.21	Second	Fourth	Third	First
Kasur	17.57	7.88	14.61	24.80	Second	Fourth	Third	First
Tandlianwala	23	4	9.8	27.42	Second	Fourth	Third	First
Pishin	14	3	6.86	21.39	Second	Fourth	Third	First
Kuchlak	17	4	7.88	13.22	First	Fourth	Third	Second

Table 6.4: 3rd Party App Upload Data Throughput

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: Automode Latency and Table 7.2: 3rd Party App Latency.

Latency In Automode Testing								
City	Latency [milliseconds]				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	**99.40**	66.43	66.78	44.58	**No**	Yes	Yes	Yes
Dinga town	**88.06**	70.61	**81.36**	**93.60**	**No**	Yes	**No**	**No**
Hub	**95.67**	**130.16**	**99.73**	**137.20**	**No**	**No**	**No**	**No**
Islamabad	**106.04**	71.77	62.91	**83.94**	**No**	Yes	Yes	**No**
Kandiaro	**123.99**	**96.80**	**137.87**	**78.45**	**No**	**No**	**No**	**No**
Nowshera	**89.72**	**93.05**	**94.15**	**77.08**	**No**	**No**	**No**	**No**
Rahim Yar Khan	**103.38**	**143.19**	**122.91**	48.34	**No**	**No**	**No**	Yes
Pano Aqil	**133.52**	**119.52**	**120.02**	**80.87**	**No**	**No**	**No**	**No**
Hala	**82.29**	**107.22**	**94.18**	**78.45**	**No**	**No**	**No**	**No**
Chamkani	72	73	**79**	**89**	Yes	Yes	**No**	**No**
Hattar	**102.95**	**84.18**	**95.31**	58.65	**No**	**No**	**No**	Yes
Kasur	**112.01**	65.70	**78.12**	52.49	**No**	Yes	**No**	Yes
Tandlianwala	**127.91**	**99.79**	**232.01**	**79.73**	**No**	**No**	**No**	**No**
Pishin	**121.01**	**99.84**	**145.71**	**160.67**	**No**	**No**	**No**	**No**
Kuchlak	**102.22**	**112.26**	**84.61**	**132.83**	**No**	**No**	**No**	**No**

Table 7.1: Automode Latency

Latency in 3rd Party App Testing								
City	Latency [milliseconds]				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	23.02	29.87	29.39	17.92	Yes	Yes	Yes	Yes
Dinga town	35.97	29.29	43.89	22.89	Yes	Yes	Yes	Yes
Hub	29.08	38.79	29.26	18.50	Yes	Yes	Yes	Yes
Islamabad	24.89	38.62	31.79	17.43	Yes	Yes	Yes	Yes
Kandiaro	31.20	32.26	33.06	25.12	Yes	Yes	Yes	Yes
Nowshera	27.95	41.85	29.75	24.11	Yes	Yes	Yes	Yes
Rahim Yar Khan	32.25	**75.00**	65.92	24.03	Yes	**No**	Yes	Yes
Pano Aqil	32.89	56.56	33.15	28.28	Yes	Yes	Yes	Yes
Hala	28.86	39.17	43.35	25.76	Yes	Yes	Yes	Yes
Chamkani	24.64	28.93	27.19	**80.10**	Yes	Yes	Yes	**No**
Hattar	25.16	30.81	26.92	17.26	Yes	Yes	Yes	Yes
Kasur	29.38	22.68	39.81	17.88	Yes	Yes	Yes	Yes
Tandlianwala	35.78	61.84	**92.23**	22.85	Yes	Yes	**No**	Yes
Pishin	36.52	48.67	73.01	40.28	Yes	Yes	Yes	Yes
Kuchlak	30.07	50.14	39.38	30.1	Yes	Yes	Yes	Yes

Table 7.2: 3rd Party App Latency

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	Webpage Loading Time [seconds]				Compliant (Yes/No)			
	Jazz	Telenor	Ufone	ZonG	Jazz	Telenor	Ufone	ZonG
Dina town	2.92	**5.88**	1.21	3.74	Yes	**No**	Yes	Yes
Dinga town	3.54	**7.57**	1.48	3.54	Yes	**No**	Yes	Yes
Hub	3.67	**6.65**	1.49	4.86	Yes	**No**	Yes	Yes
Islamabad	2.94	**5.94**	0.83	4.24	Yes	**No**	Yes	Yes
Kandiaro	3.14	**6.13**	1.36	**5.45**	Yes	**No**	Yes	**No**
Nowshera	3.27	**6.25**	1.22	4.57	Yes	**No**	Yes	Yes
Rahim Yar Khan	2.63	**7.50**	1.24	4.15	Yes	**No**	Yes	Yes
Pano Aqil	3.23	**7.81**	1.26	4.30	Yes	**No**	Yes	Yes
Hala	3.04	**6.46**	1.30	4.71	Yes	**No**	Yes	Yes
Chamkani	2.8	**5.6**	0.8	**5.6**	Yes	**No**	Yes	**No**
Hattar	3.28	**7.30**	1.13	4.45	Yes	**No**	Yes	Yes
Kasur	2.84	**6.04**	0.94	3.57	Yes	**No**	Yes	Yes
Tandlianwala	3.34	**6.40**	1.49	3.77	Yes	**No**	Yes	Yes
Pishin	4.04	1.87	1.51	4.04	Yes	Yes	Yes	Yes
Kuchlak	3.11	**6.02**	1.05	4.30	Yes	**No**	Yes	Yes

Table 8.1: Web Page Loading Time

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 and Table 9.3: Voice QoS KPIs Compliance Level

CMO	KPI	Dina town	Dinga town	Hub	Islamabad	Kandiaro
Jazz	NA	100	100	100	100	100
	CSSR	100	99.31	99.55	99.76	99.26
	CCT	2.4	2.39	2.30	2.53	2.52
	CCR	100	99.65	99.55	99.76	100
	MOS	3.93	3.86	3.76	3.83	4.18
Telenor	NA	99.99	99.99	99.95	99.99	99.94
	CSSR	99.39	99.31	98.20	98.07	**93.33**
	CCT	3.07	2.78	3.16	3.10	2.76
	CCR	99.39	99.65	99.54	99.26	99.60
	MOS	4.10	3.86	3.47	4.04	3.90
Ufone	NA	100	100	99.98	99.98	99.99
	CSSR	99.42	99.31	**96.44**	**96.13**	99.25
	CCT	5.19	5.21	5.47	5.91	5.61
	CCR	99.12	100	98.16	98.24	100
	MOS	3.74	3.30	3.40	3.65	3.49
ZonG	NA	99.99	99.99	100	99.98	100
	CSSR	99.13	99.65	97.72	98.79	98.14
	CCT	3.73	1.72	2.56	4.26	4.17
	CCR	99.71	99.65	99.07	98.29	99.62
	MOS	3.63	3.83	3.25	3.44	**2.98**

Table 9.1: Voice QoS KPIs Compliance Level

CMO	KPI	Nowshera	Rahim Yar Khan	Pano Aqil	Pishin	Kuchlak
Jazz	NA	100	100	100	100	100
	CSSR	99.73	98.86	99.39	100	100
	CCT	2.59	2.64	2.65	2.55	2.66
	CCR	100	99.71	99.69	99.52	100
	MOS	3.77	3.84	4.11	3.85	3.86
Telenor	NA	100	99.92	100	100	100
	CSSR	**97.53**	**94.86**	**97.52**	**97.01**	100
	CCT	2.90	3.20	2.73	2.97	3.00
	CCR	99.72	99.40	99.37	**97.95**	99.58
	MOS	3.77	3.78	3.85	3.71	3.79
Ufone	NA	100	99.99	100	99.99	100
	CSSR	99.11	99.71	99.69	100	99.58
	CCT	6.20	5.29	4.96	4.66	4.91
	CCR	99.40	99.42	100	99.05	99.58

CMO	KPI	Nowshera	Rahim Yar Khan	Pano Aqil	Pishin	Kuchlak
	MOS	3.46	3.46	3.52	3.56	3.54
ZonG	NA	100	100	100	100	100
	CSSR	99.73	99.14	100	100	100
	CCT	2.30	2.57	3.63	1.91	1.61
	CCR	99.73	99.42	100	99.03	100
	MOS	3.67	3.82	3.22	3.43	3.66

Table 9.2: Voice QoS KPIs Compliance Level

CMO	KPI	Hala	Chamkani	Hattar	Kasur	Tandliawala
Jazz	NA	99.99	100	100	100	100
	CSSR	100	99.27	99.28	98.36	100
	CCT	2.70	2.43	2.64	2.61	2.90
	CCR	99.32	98.90	99.27	99.72	100
	MOS	3.94	3.91	3.78	3.69	3.89
Telenor	NA	99.70	100	99.98	100	100
	CSSR	**91.61**	100	98.57	98.11	**96.06**
	CCT	3.77	2.82	3.09	2.87	3.14
	CCR	**94.27**	100	98.19	99.17	99.49
	MOS	3.39	3.94	3.72	3.91	4.25
Ufone	NA	100	100	100	100	100
	CSSR	100	99.64	99.64	**97.79**	99.51
	CCT	4.68	5.19	5.24	5.20	4.38
	CCR	100	100	99.64	100	100
	MOS	3.54	3.63	3.62	3.50	3.50
ZonG	NA	100	100	100	99.99	100
	CSSR	99.65	99.65	99.64	99.45	99.03
	CCT	2.18	2.69	2.11	2.58	3.52
	CCR	**97.22**	100	100	99.45	100
	MOS	3.69	3.95	3.69	3.87	3.92

** 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 9.3: 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**
Dina town	**97.34**	2.54	**98.51**	3.17	99.12	2.79	100	2.31
Dinga town	**97.94**	2.48	**98.27**	2.95	100	2.58	100	2.35
Hub	99.11	3.41	99.11	3.27	99.11	2.60	**98.22**	3.01
Islamabad	**97.56**	2.68	**98.51**	3.37	**98.29**	3.42	100	2.87
Kandiaro	**98.15**	3.06	**98.89**	2.93	99.63	2.46	98.89	2.69
Nowshera	**98.36**	2.67	99.46	2.56	98.81	2.64	100	2.20
Rahim Yar Khan	99.43	3.00	**98.58**	3.14	99.43	2.25	98.58	2.71

Pano Aqil	**97.87**	3.42	100	2.92	**97.50**	2.57	100	2.53
Hala	**97.95**	3.01	**88.97**	4.41	99.66	2.32	100	2.30
Chamkani	**97.07**	2.56	99.28	2.44	99.64	2.72	100	2.10
Hattar	**98.19**	2.58	**98.90**	2.54	99.27	3.89	98.92	2.27
Kasur	**96.48**	2.78	99.73	2.96	**97.83**	2.41	99.46	2.55
Tandlianwala	99.02	3.20	99.51	2.97	99.51	2.45	100	2.97
Pishin	100	2.96	100	3.44	99.52	2.50	100	2.61
Kuchlak	**98.75**	2.89	99.58	3.20	99.58	2.80	100	2.20
**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.

	Operator	**Compliance Level – Number of Cities Technology Auto Detect Mode**						**Standing**
		Compliant			**Non-Compliant**			
		4G	**3G**	**Total**	**4G**	**3G**	**Total**	
1.	Zong	15	4	19	-	-	0	1st
2.	Jazz	13	-	13	2	-	2	2nd
3.	Ufone	13	10	23	2	1	3	3rd
4.	Telenor	8	7	15	7	-	7	4th

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.

S. #	**Operator**	**Highest Download Throughput – Number of Cities (Automode)**				**Standing**
		1st	**2nd**	**3rd**	**4th**	
1.	Jazz	11	3	1	-	1st
2.	Zong	4	10	1	-	2nd
3.	Ufone	-	1	11	3	3rd
4.	Telenor	-	1	2	12	4th

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 (Automode)				Standing
		1st	2nd	3rd	4th	
1.	Jazz	10	5	-	-	1st
2.	Zong	5	8	2	-	2nd
3.	Ufone	-	2	13	-	3rd
4.	Telenor	-	-	-	15	4th

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	15	-	1st
2.	Ufone	15	-	1st
3.	Zong	13	2	2nd
4.	Telenor	1	14	3rd

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	15	-	1st
2.	Zong	14	1	2nd
3.	Ufone	14	1	2nd
4.	Telenor	14	1	2nd

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

v. Latency (Automode). 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 (Automode).

S. #	Operator	Latency - Number of Cities		Standing
		Compliant	Non-Compliant	
1.	Telenor	5	10	1st
2.	Zong	4	11	2nd
3.	Ufone	2	13	3rd
4.	Jazz	1	14	4th

Table 12.5: CMOs Standing in Latency (Automode)

vi. Download Data Throughput (3rd Party App). 3rd Party 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.	Zong	10	5	-	-	1st
2.	Jazz	5	10	-	-	2nd
3.	Ufone	-	-	13	2	3rd
4.	Telenor	-	-	2	13	4th

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.	Zong	8	6	1	-	1st
2.	Jazz	7	8	-	-	2nd
3.	Ufone	-	1	14	0	3rd
4.	Telenor	-	-	-	15	4th

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 Service

S.#	Operator	Voice QoS KPIs		Standing
		Compliant	Non-Compliant	
1.	Jazz	75	-	1st
2.	Zong	72	3	2nd
3.	Ufone	72	3	2nd
4.	Telenor	66	9	3rd

Table 13.1: CMOs Standing in Voice Service

S. #	Operator	SMS QoS KPIs		Standing
		Compliant	Non-Compliant	
1.	Zong	26	4	1st
2.	Ufone	26	4	1st
3.	Telenor	23	7	2nd
4.	Jazz	19	11	3rd

Table 13.2: CMOs Standing in SMS Service