Best Albanian Mobile Network

omnitele
benchmark
2023

1 one

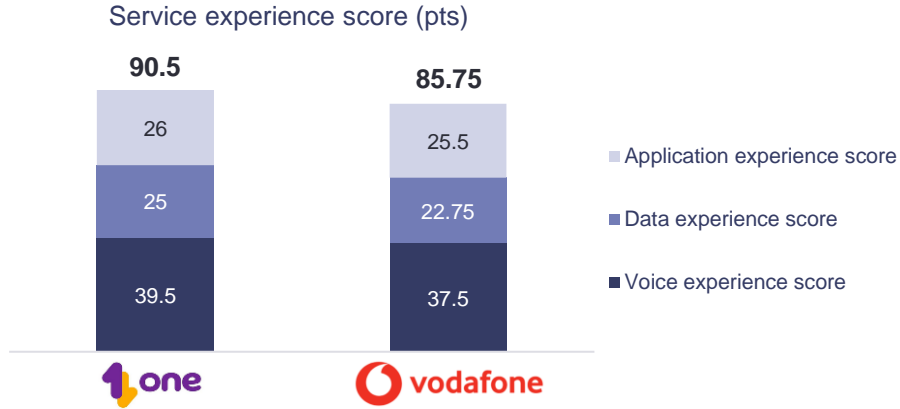| Voice Services	Data Services	Applications
39.5/40	25/30	26/30

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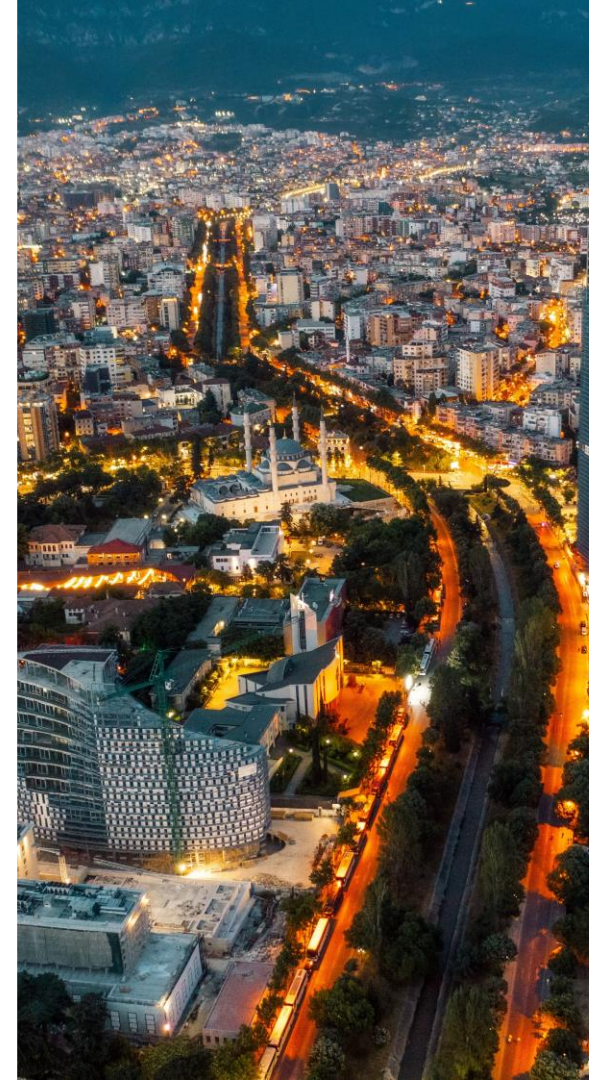# Albanian mobile network benchmark, March 2023

Report, 28 April 2023

ONE Albania achieved the best service experience score in the Albanian mobile network benchmark

Service experience score (pts)

- ■ Application experience score
- ■ Data experience score
- ■ Voice experience score

Omnitele conducted an independent assessment of network quality and service experience benchmarking campaign in Albania in March. The benchmark measurements compared the voice, data and application services in ONE Albania and Vodafone networks.

Evaluation of end-user perceived service experience revealed that ONE Albania had the best overall service experience in the benchmarking campaign.

ONE scored **90.5 points** (out of 100), whereas Vodafone scored **85.75 points**. ONE outscored Vodafone in each service experience category.

More details on Omnitele's service experience scoring methodology and evaluation criteria can be found in the end of this report.

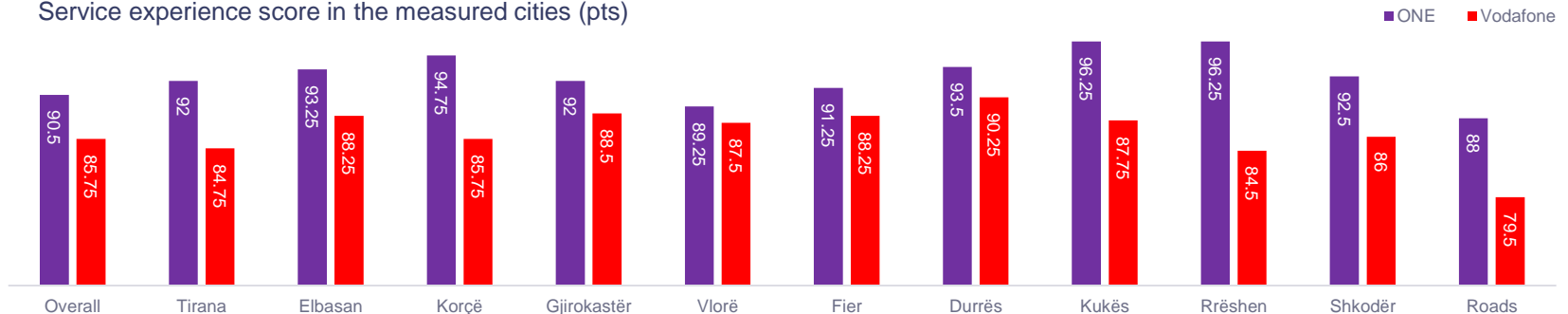# ONE provided the best service experience throughout Albania

ONE achieved the highest total service experience score **in every measured area** (11/11). Measured areas included 10 cities and main connecting roads between the cities.

ONE's highest score (96.25 points) was obtained in both Kukës and Rrëshen, whereas Vodafone's highest score (90.25 points) was obtained in Durrës.

The gap between ONE and Vodafone varied between different areas. ONE outscored Vodafone by seven or more points in Rrëshen, Korçë, Kukës, on roads and in Tirana. The difference was the smallest in Vlorë.

Service experience score in the measured cities (pts)

■ ONE ■ Vodafone

	Overall	Tirana	Elbasan	Korçë	Gjirokastër	Vlorë	Fier	Durrës	Kukës	Rrëshen	Shkodër	Roads
ONE	90.5	92	93.25	94.75	92	89.25	91.25	93.5	96.25	96.25	92.5	88
Vodafone	85.75	84.75	88.25	85.75	88.5	87.5	88.25	90.25	87.75	84.5	86	79.5

ONE achieved the highest score in each service experience category

Voice call experience

Both operators had excellent voice service throughout the measured area, but ONE achieved a higher score in voice call service due to shorter call setup time and better voice quality.

Average call setup time:
- **ONE: 1.4 seconds**
- Vodafone 2.0 seconds

Average voice quality (Mean Opinion Score):
- **ONE: 4.5 / 5**
- Vodafone: 4.4 / 5

Both operators provided world-class consistent call success rate, without significant difference between the benchmarked networks.

Call success rate:
- **ONE: 99.9 %**
- Vodafone: 99.8 %

Voice score

ONE	**39.5 / 40**
Vodafone	37.5 / 40

Data service experience

ONE network provided the highest average throughput in both download and upload tests. Both operators had a short network latency, ONE providing shorter median round trip time (RTT).

Average download throughput:
- **ONE: 118 Mbit/s**
- Vodafone: 90 Mbit/s

Average upload throughput:
- **ONE: 38 Mbit/s**
- Vodafone: 27 Mbit/s

Median latency (RTT):
- **ONE: 31 ms**
- Vodafone: 37 ms

ONE also provided good service quality (over 10 Mbit/s download) more consistently.

Share of download throughput over 10 Mbit/s:
- **ONE: 98.1 %**
- Vodafone: 92.2 %

Data score

ONE	**25 / 30**
Vodafone	22.75 / 30

Application experience

Both networks provided good application experience for the tested applications, and ONE achieved a slightly better score than Vodafone.

Web browsing

Both operators provided fast time to content, loading the tested web page on average in under four seconds, Vodafone slightly faster.

YouTube

Both operators provided quick access to video, starting the streaming on average in under one second. ONE had 100 % of high-quality video, while some low-resolution video was used in Vodafone network (1.1 % of time).

Instagram

Average loading time for Instagram self feed was under two seconds for both operators, and there was no significant difference between networks.

Facebook

Picture posting time was on average 12.9 seconds in ONE network, and 1.5 seconds slower, 14.4 seconds, in Vodafone network.

Application score

ONE	**26 / 30**
Vodafone	25.5 / 30

Omnitele benchmark campaign scope and benchmarked areas

Scope of the campaign

Drive test benchmarking measurements were carried out by Omnitele in Albania during 21.–29.3.2023 and were conducted in 10 cities (Tirana, Durrës, Elbasan, Vlorë, Shkodër, Korçë, Fier, Gjirokastër, Kukës and Rrëshen) and connecting roads between them. Measurements included voice, data and application testing for ONE and Vodafone.
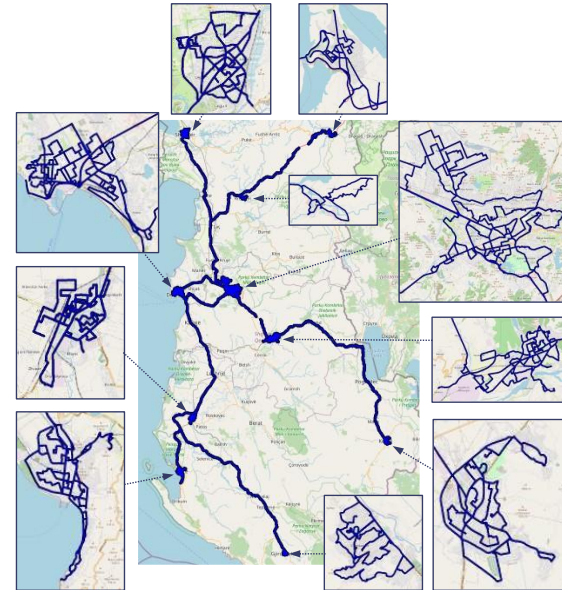
1300 km covered	46 hours of drive testing
1440 voice calls	4700 unique data sessions

Figures per operator

Benchmark measurement routes

Maps: OpenStreetMap

Benchmark methodology and measured services

Benchmark methodology

Omnitele conducted the campaign by following our internally standardised **be-the-customer** benchmark methodology. The approach is designed for capturing unbiased and objective view of how end-users actually perceive the services. This means that:

- Measured services, test cases and methodology reflect real end-user traffic profiles.

- Testing times and locations reflect subscriber behaviour and traffic distribution.

- Each network is measured at the same time, in the same location with identical equipment.

- State-of-the-art smartphones (Samsung Galaxy S21+) are used in the measurements.

  ➢ Measurement terminals freely select the best available network technology (4G/3G/2G) as normal end-user devices do.

  ➢ Measurement terminals are calibrated and swapped between operators to even out any bias from terminal impact.

- The best available subscriptions from each operator are used to mitigate any possible restrictions.

- Enough measurement samples are gathered for reliable statistical significance analysis.

Be-the-customer approach

WHERE	Dense population areas selected independently
WHEN	Test focus on peak hours, no empty network testing
HOW	Test terminals and use cases based on customer behaviour

Service experience measurement test cases

Test Case	Description
Voice Call	90 s VoLTE/CSFB call sequence with MOS (Mean Opinion Score) voice audio quality measurement using POLQA algorithm
Data Session	HTTP download: 30 s continuous data transfer HTTP upload: 30 s continuous data transfer Latency: ping RTT (round trip time) WWW browsing: static web page loading YouTube: 30 s full HD video streaming Instagram: Load self feed Facebook: Post picture (3 MB)

Service experience evaluation methodology

Service experience evaluation model

In mobile network benchmarking, Omnitele deploys a proprietary *End-User Service Experience Evaluation Model* that defines Quality of Service and Experience KPIs and subsequent KPI weightings based on which a network operator's service experience score is determined. The scoring thresholds used in the service experience analysis model are based on Omnitele's experience from many benchmarking campaigns in different markets worldwide. Working with this international experience, the building of the specific service experience analysis model comes down to the adaptation of the various KPI scoring thresholds to accurately represent the specific local market situation, the regulator's requirements and mobile users' network performance expectations.

The service experience results are determined for different service categories and aggregation levels. Final scores are obtained by the individual KPI weighting. Evaluation of end-user service experience is based on three main service components:

- Voice service experience 40 %

- Data service experience 30 %

- Application experience 30 %

One Albania is a consolidated network of two Albanian mobile networks of One Telecommunications and ALBtelecom.

Omnitele is an internationally recognized, independent mobile network consulting company, with an extensive history in the domain of mobile network benchmarking through field measurements.

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Service experience scoring

Service	Key performance indicator (KPI)	Max score
Voice	Call setup time (average)	10
	Call success rate	20
	Voice audio quality (average)	5
	Low voice audio quality	5
Voice total		*40*
Data	Download data speed (average)	7,5
	Low download data speed	5
	Upload data speed (average)	7,5
	Low upload data speed	5
	Latency (median)	5
Data total		*30*
Applications	Browsing: load web page	10
	Youtube streaming: initial buffering	5
	Youtube streaming: low resolution	5
	Instagram: load self feed	5
	Facebook: post picture	5
Applications total		*30*
Total score		100