

MEASURING BROADBAND QUALITY OF EXPERIENCE IN MALAYSIA

by

Malaysian Communications and Multimedia Commission

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QUALITY OF SERVICE (QoS) & QUALITY OF EXPERIENCE (QoE)





OBJECTIVES OF BROADBAND QUALITY OF EXPERIENCE SURVEY (BQoES)







Aims to understand and measure consumer satisfaction level and expectation from major public broadband service providers



Results and data from the survey will provide stakeholders a better understanding on broadband consumers' experience in Malaysia, for better decision making

SURVEY METHODOLOGY





Five (5) survey <u>scopes</u>: Video streaming, Web browsing, Online gaming, Online voice calls, Online video calls

SURVEYSCOPES



SCOPE	INDICATOR	EXAMPLE OF QUESTIONS
Video streaming	 Name of video streaming services Level of satisfaction & importance 	• How important to you is the [scope] service?
		Which of the following video streaming / online video or movie services have you mostly watched on your [service provider] in the past 6 months?
Web browsing	 Websites/app mostly visited Web browser/app mostly used Level of satisfaction & importance 	What is your level of satisfaction with your [scope] service experience on [service provider]?
		Which of the following [scope] problems is the most frustrating for you when it occurs?
Online gaming	 Online games mostly played Device mostly used Level of satisfaction & importance 	How likely would you recommend [scope] via [service provider] service to your family/colleagues/friends?
		Which of the following websites have you mostly visited via [service provider] on your device in the past 6 months?
Online voice calls	 Applications mostly used Level of satisfaction & importance 	 What device do you mainly use to play online games in the past 6 months? Please stated the device model.
		Which of the following online games have you mostly played on your online gaming device in the past 6 months?
Online video calls	 Applications mostly used Device mostly used Level of satisfaction & importance 	Which of the following applications have you mostly used on your device to make online voice calls in the past 6 months?
		 Which of the following applications have you mostly used on your device to make online video calls in the past 6 months?
		+BACK



Survey Framework I: Consumer Satisfaction Index (CSI)

Consumer Satisfaction Index (CSI) (1/2)





The CSI Model adapted from MCMC Consumer Satisfaction Survey (2011 – 2024):



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Consumer Satisfaction Index (CSI) (2/2)



Interpretation of the CSI score based on the relationship between loyalty and satisfaction as described in the Profit Chain from Heskett, J., W. E. Sasser Jr., and L. Schlesinger.



Consumer Satis faction Index (CSI): Overall







Survey Framework II: Service Quality Gap (SQG)

Service Quality Gap (SQG)



Service quality gap analysis was conducted to explore whether the performance of the broadband service providers meets consumers' expectations. Adapted from Parasuraman et al. (1985), service quality gap analysis conducted by assessing the mean difference of the performance and expectation score



Adapted from Parasuraman et al. (1985), service quality gap analysis is calculated on each attribute by calculating the difference between Mean Expectation ($\overline{I_k}$) and Mean Performance ($\overline{P_k}$) for a particular attribute (k), as follows:



Service Quality Gap (SQG): FBB





Gap score

- Only online gaming exceeded expectations among fixed-broadband consumers
- Largest gap: Online gaming Smallest gap: Online video calls
- YoY gap score comparison shows the following:
 - Web browsing had improved the most by 0.10
 - Second most improved is online video calls by 0.09
 - Video streaming is the only scope that experienced broader gap by 0.05

Fixed-broadband: Expectation and Performance score



Service Quality Gap (SQG): MBB

Mobile-broadband: Expectation and Performance score



 Overall, MBB improved their gap score from 2022 to 2023, however consumers' expectations were still not met
 Gap: -0.34 3.81
 Gap: -0.03 3.73 3.70
 A47
 Expectation
 Performance
 Overall 2022
 Overall 2023

- Only online gaming exceeded expectations among mobile-broadband consumers
- Largest gap: Online gaming Smallest gap: Video streaming
- YoY gap score comparison shows that all scopes had improved:
 - Online gaming had improved the most by 0.59
 - Second most improved is shared between video streaming and online video calls by 0.31

	1	1		
Video streaming	Expectation 3.73 Performance 3.68	$\begin{array}{c} 1.0 \\ 0.6 \\ 0.2 \\ -0.2 \\ -0.6 \end{array}$	-0.04	2022: -0.35
Web browsing	Expectation 4.39 Performance 3.84	$\begin{array}{c} 1.0 \\ 0.6 \\ -0.2 \\ -0.2 \\ -0.6 \end{array}$	-0.55	2022: -0.81
Online gaming	Expectation 2.61 Performance 3.54	$\begin{array}{c} 1.0 \\ 0.6 \\ 0.2 \\ -0.2 \\ -0.6 \end{array}$	0.93	2022: 0.34
Online voice calls	Expectation 4.05 Performance 3.72	1.0 0.6 0.2 -0.2 -0.6	-0.33	2022: -0.37
Online video calls	Expectation 3.88 Performance 3.69	$\begin{array}{c} 1.0 \\ 0.6 \\ -0.2 \\ -0.2 \\ -0.6 \end{array}$	-0.19	2022: -0.50

 Gap score = Performance - Expectation

 Gap score = 0 : Expectation met

 Gap score < 0 : Expectation not met</td>

Gap score



Survey Framework III: Importance-Performance Analysis (IPA)

Importance-Performance Analysis (IPA)



Importance-Performance Analysis was carried out to identify the high-performing scopes as the strength of the service providers as well as the lowperforming scopes that required intervention for improvement.

Developed by Martilla and James (1977), Importance-performance analysis (IPA) identifies the relative importance (expectation) of the attributes associated with a service or product while at the same time indicating the degree of performance (satisfaction)



Importance-Performance Analysis (IPA): FBB



High Importance,

Π

3.79

IV

4.50

Low Importance,

Possible Overkill

High Performance:

High Performance:

Need to be monitored

• Web browsing

Video streaming

4.00



• All scopes remained in the same quadrant as previous year

• Web browsing and video streaming continue to improve its score to be above average

3.85

Importance-Performance Analysis (IPA): MBB



• Overall, average satisfaction among MBB consumers increased from 3.47 in 2022 to 3.70 in 2023

- Web browsing and online voice calls showed good improvement YoY
- Importance of online gaming among MBB consumers dropped, but there was an increment in the satisfaction





QoE: Objective Measurement

MEASURING QUALITY OF EXPERIENCE IN WIRELESS



Suruhanjaya Komunikasi dan Multimedia Malaysia

Malaysian Communications and Multimedia Commission

GUIDELINES TO THE COMMISSION DETERMINATION ON THE MANDATORY STANDARDS FOR QUALITY OF SERVICE (WIRELESS BROADBAND ACCESS SERVICE) DETERMINATION NO. 2 OF 2023

(SKMM(T)06-SEIR/140.003/Jil. 3 (09))

29 December 2023



QOE MEASUREMENT METHODOLOGY





Conditions of the Measurement location:

Outdoor: Residential areas, industrial areas, tourism areas, educational institutions, business districts, highways, federal roads, state roads, railways, and public facilities (airports, train stations, healthcare facilities, etc.) **Indoor**: Indoor common areas for residential, tourism, educational institutions, business districts, government, exhibition, and public facilities (airports, train stations, healthcare facilities, etc.) **Special consideration:** Shall be given, subject to the Commission's discretion for areas where limited access or space is required to provide network services (i.e. tunnels, private areas, basements, buildings above 12 floors, etc.)

BROADBAND QUALITY COMPLAINTS DROP

Number of complaints on network issues for 2021–2023 were on a declining trend



Network issues inclusive of coverage, Internet connection, speed, service disruption, etc.

PUBLICATION OF THE SURVEY REPORTS





Publicly available in MCMC website: https://www.skmm.gov.my/en/resources/statistics/bqoes





THANK YOU