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Malaysian Communications and Multimedia Commission



BROADBAND QUALITY OF EXPERIENCE SURVEY 2023 (BQOES 2023)

MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION, 2024

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MCMC Tower 1, Jalan Impact, Cyber 6

63000 Cyberjaya, Selangor Darul Ehsan

Tel: +60 3 8688 8000 Fax: +60 3 8688 1000

Aduan MCMC: 1-800-188-030

<http://www.mcmc.gov.my>



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Executive Summary

The Broadband Quality of Experience Survey 2023 (BQoES 2023) marked the third edition of the survey commissioned by the Malaysian Communications and Multimedia Commission (MCMC). The primary objective of this survey is to evaluate the level of consumer satisfaction among consumers of broadband services in Malaysia. The insights from this survey enable broadband service providers to enhance their service quality and effectively address consumer concerns.

The survey placed its focus on evaluating broadband quality of experience through analysis across five distinct scopes: video streaming, which encompasses the seamless delivery and playback of multimedia content; web browsing, assessing the responsiveness and speed of accessing online websites and services; online gaming, evaluating the performance for immersive gaming experiences; online voice calls, examining the clarity and reliability of voice communication over the internet; and online video calls, scrutinising the stability and visual quality of real-time video conversations conducted online.

BQoES 2023 covered consumers of both fixed and mobile broadband services. The survey maintained a confidence level of 95% and a precision of $\pm 5\%$ for each service provider, reaching a sample size of 4,608 respondents. For data collection, respondents were evaluated using both Computer-Assisted Telephone Interview (CATI) and MCMC's secure online survey questionnaire portal.

In both services, the survey results indicated that web browsing had the highest Consumer Satisfaction Index (CSI) score. Conversely, online gaming emerged with the lowest CSI score in both service categories, indicating a notable area for improvement to enhance overall customer satisfaction and experience. This disparity in satisfaction levels between web browsing and online gaming suggests the varying impact of different service components on consumer perceptions and underscores the importance of addressing deficiencies in relevant areas to achieve optimal satisfaction levels across the broadband services in Malaysia.

Key Highlights

Overall CSI Score



Fixed Broadband
3.83

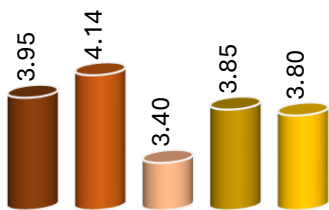


Mobile Broadband
3.70

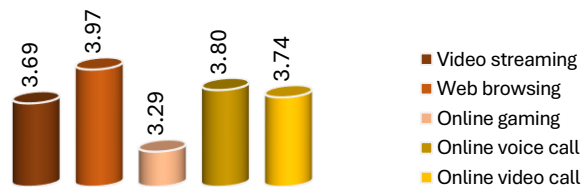
Fixed Broadband consumers are slightly satisfied with the service as compared to Mobile Broadband consumers

CSI by Scope

Fixed Broadband



Mobile Broadband



Web browsing topped the list for both broadband services

Service Quality Gap

Fixed Broadband

-0.47 Web browsing

-0.19 Online voice calls

Mobile Broadband

-0.55 Web browsing

-0.33 Online voice calls

Highest gap between consumers' expectation and service providers' performance were observed in web browsing and online voice calls for both services

Areas of Improvement

Fixed Broadband

Online voice calls

Online video calls

Mobile Broadband

Video streaming

Online video calls

Online voice calls, online video calls and video streaming were identified as areas of improvement in order to increase consumers' satisfaction

Methodology

Survey Methodology

The survey covered two types of consumers: Fixed Broadband (FBB) and Mobile Broadband (MBB) consumers. Three service providers (SPs) were included in the FBB service, while six SPs were included in the MBB service, as listed in Table 1 below.

Table 1: List of Service Providers Participating in BQoES 2023

Service	Service Provider
Fixed Broadband	Maxis Communications Berhad (Maxis)
	TM Technology Services Sdn. Bhd. ¹ (TM-Tech)
	TT dotCom Sdn. Bhd. (TIME)
Mobile Broadband	Celcom Axiata Berhad (Celcom)
	DiGi Telecommunications Sdn. Bhd. (Digi)
	Maxis Broadband Sdn. Bhd. (Maxis)
	U Mobile Sdn. Bhd. (U Mobile)
	TM Technology Services Sdn. Bhd. ² (TM-Tech)
	YTL Communications Sdn. Bhd. (YTLC)

The sample population for this survey were selected by the following methods:

1. Mobile Station International Subscriber Directory Number (MSISDN) were generated randomly and submitted to SPs for verification, i.e., active, inactive, ported-out, etc. Interviewers will then call the active numbers and collect the completed responses; and
2. Survey link and QR code were disseminated through MCMC website, social media, and SP's website. The public could access the survey link and QR code from a variety of devices, including smartphones, Internet-enabled feature phones, desktops, laptops and tablets.

¹ Formerly known as Telekom Malaysia Berhad

² Formerly known as Webe Digital Sdn Bhd

The survey adopted a confidence level of 95% with a precision level of $\pm 5\%$ for both services, reaching a sample size of 1,152 respondents for FBB and 2,304 respondents for MBB.

Scope of Survey

BQoES 2023 focused on five scopes³ within broadband services: video streaming, web browsing, online gaming, online voice calls and online video calls. The survey questions corresponding to each scope are listed in Table 2 below.

Table 2: List of Scopes and Questions for BQoES 2023

Scope	Question
Video streaming	1. Name of video streaming service mostly used
	2. Level of importance
	3. Level of satisfaction
Web browsing	1. Name of website/app mostly visited
	2. Name of web browser mostly used
	3. Level of importance
	4. Level of satisfaction
Online gaming	1. Name of online game mostly played
	2. Name of device mostly used for online gaming
	3. Level of importance
	4. Level of satisfaction
Online voice calls	1. Name of application mostly used for online voice call
	2. Level of importance
	3. Level of satisfaction
Online video calls	1. Name of application mostly used for online video call
	2. Level of importance
	3. Level of satisfaction

³ Selection of scope was based on the discussion and final report of the National Digital Infrastructure Lab (NDIL) published by MCMC

These scopes were evaluated according to consumers' perceptions relating to their expectations and performance of each service provider, using a 5-point Likert scale. Consumers' expectations were measured based on their level of importance towards broadband services, while service providers' performance is based on their level of satisfaction, as illustrated in Table 3 below.

Table 3: 5-Point Likert Scale

Rating scale	Expectation	Performance
5	Extremely important	Extremely satisfied
4	Somewhat important	Somewhat satisfied
3	Neutral	Neutral
2	Somewhat not important	Somewhat dissatisfied
1	Extremely not important	Extremely dissatisfied

In addition, the survey also addressed eight demographic profiles of consumers, including age, nationality, gender, employment status, highest level of education, ethnicity, average monthly income, and urban-rural distribution.

Survey Framework

To align with the objectives of BQoES 2023, the framework was developed based on three analyses, as depicted in Figure 1 below.

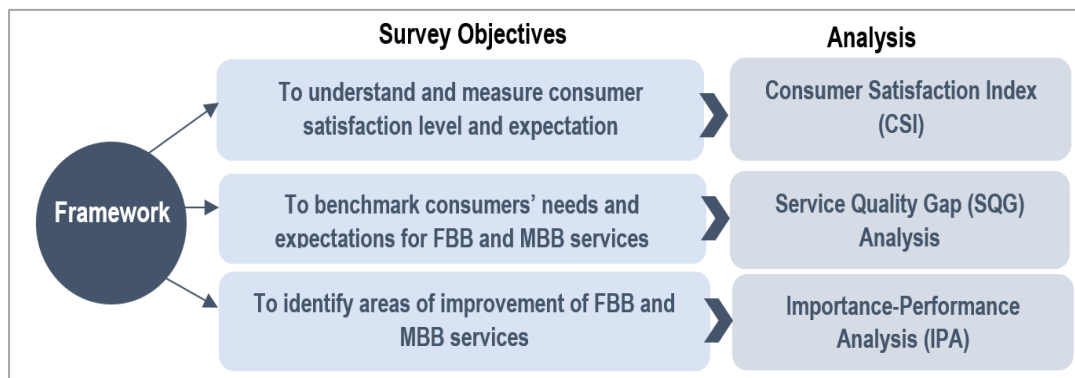


Figure 1: Framework of BQoES 2023

Consumer Satisfaction Index (CSI)

Over the past few decades, consumer satisfaction has been defined in various ways. Literature suggests that it can be described as the judgement, impression, response, or evaluation based on the products or services received by consumers.

For instance, Anderson et al. (1994)⁴ suggested that consumer satisfaction could be defined in two different ways depending on the consumer experiences: specific experiences and cumulative experiences. During specific experiences, consumer satisfaction is defined as the post-choice evaluative judgement of a specific purchase occasion. Meanwhile, for cumulative experiences, consumer satisfaction is determined as a result of consumers' evaluation of their total purchase and consumption experience over time.

However, focusing on satisfaction solely is not sufficient, as understanding the requirements or expectations from consumers need to be considered as well. In today's highly competitive market, where all service providers have equal opportunities to provide services, it is essential for them to measure themselves on their ability to meet beyond customers' expectations. According to Gitomer, J. (1998)⁵, he stated that satisfaction is the consumer's assessment of a product or service in terms of the extent to which that product or service has met his/her needs or expectations.

Therefore, in BQoES 2023, CSI was evaluated based on consumers' experiences with the performance of service providers and their expectations. Additionally, the market share of each service provider was incorporated as a final weighting factor to calculate the individual service provider's CSI score, as shown in Figure 2. Accordingly, the interpretation of the CSI score is based on relationship between loyalty and satisfaction as described in the Profit Chain from Heskett et al. (1997). Figure 3 illustrated the interpretation of the CSI scores.

⁴ Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of marketing*, 58(3), 53-66.

⁵ Gitomer, J. (1998). *Customer satisfaction is worthless, customer loyalty is priceless: How to make customers love you, keep them coming back, and tell everyone they know*. Austin, TX: Bard Press

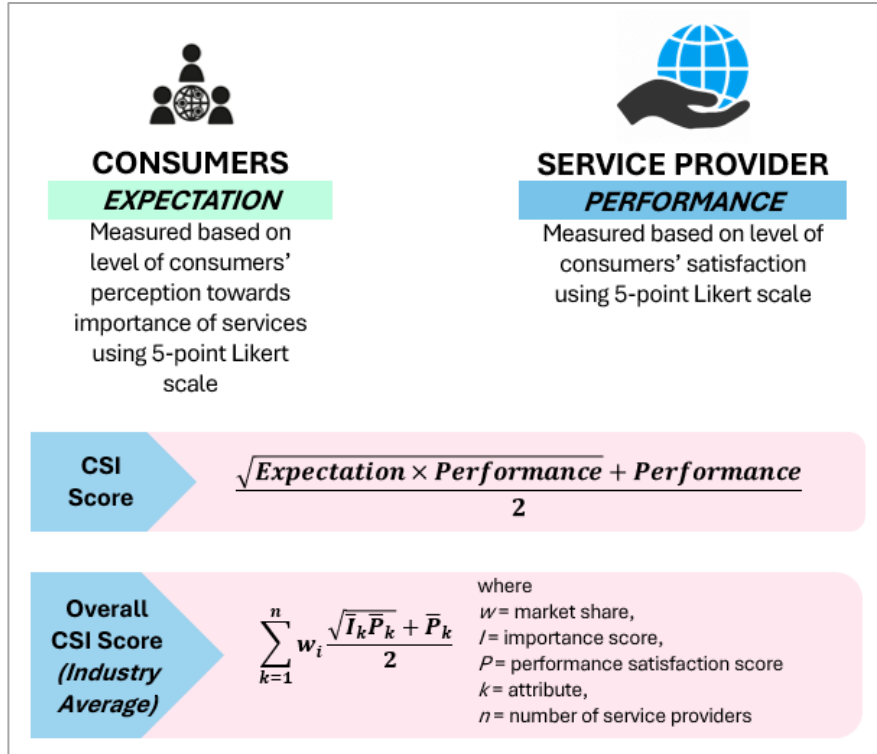


Figure 2: Consumer Satisfaction Index Model for BQoES 2023

Subsequently, the interpretation of the CSI score was guided by the relationship between loyalty and satisfaction as described in the Profit Chain by Heskett et al. (1997). Figure 3 illustrates the interpretation of the CSI scores.

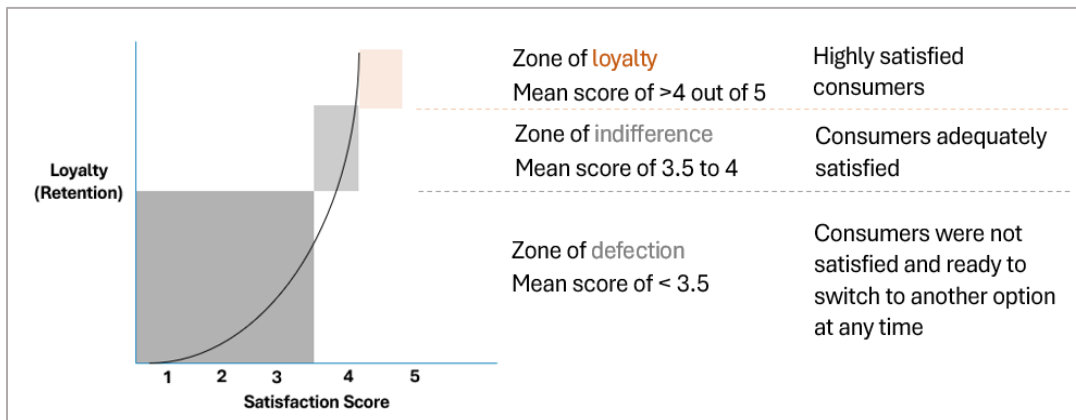


Figure 3: CSI Scores and Interpretation⁶

⁶ 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. *The Service Profit Chain: How Leading Companies Link Profit and Growth to Loyalty, Satisfaction, and Value*. New York: Free Press, 1997

Service Quality Gap Analysis

Service Quality Gap (SQG) analysis was conducted to explore whether the performance of the broadband service providers meets consumers' expectations. Adapted from Parasuraman et al. (1985), SQG analysis involves assessing the mean difference between the performance and expectation scores. Figure 4 illustrates the computation of the SQG analysis.

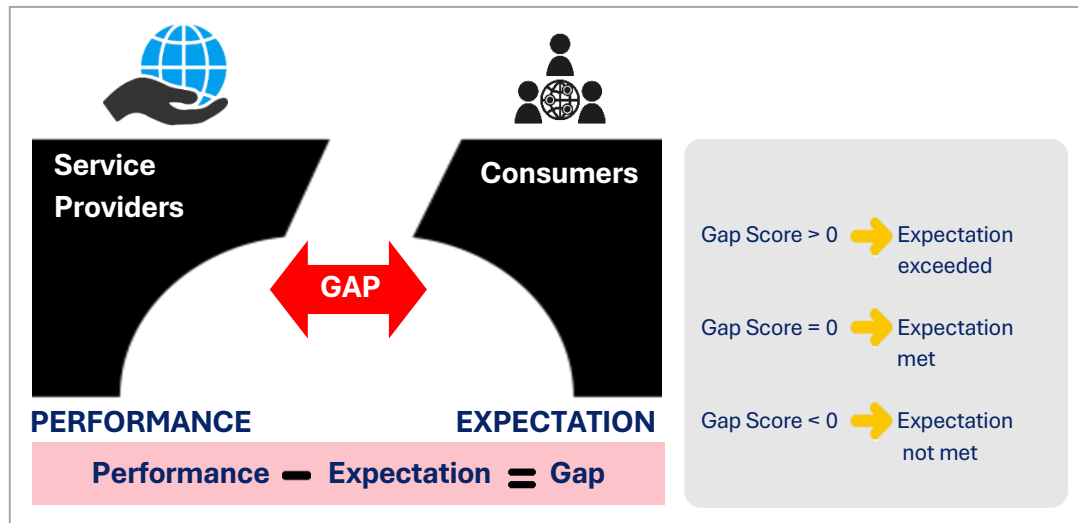


Figure 4: Service Quality Gap Model for BQoES 2023

Importance-Performance Analysis

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

Developed by Martilla and James (1977), 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). The results are plotted graphically on a two-dimensional grid, in which the performance of the attribute is displayed on the horizontal axis while the importance level is displayed on the vertical axis. Figure 5 illustrated details of IPA.

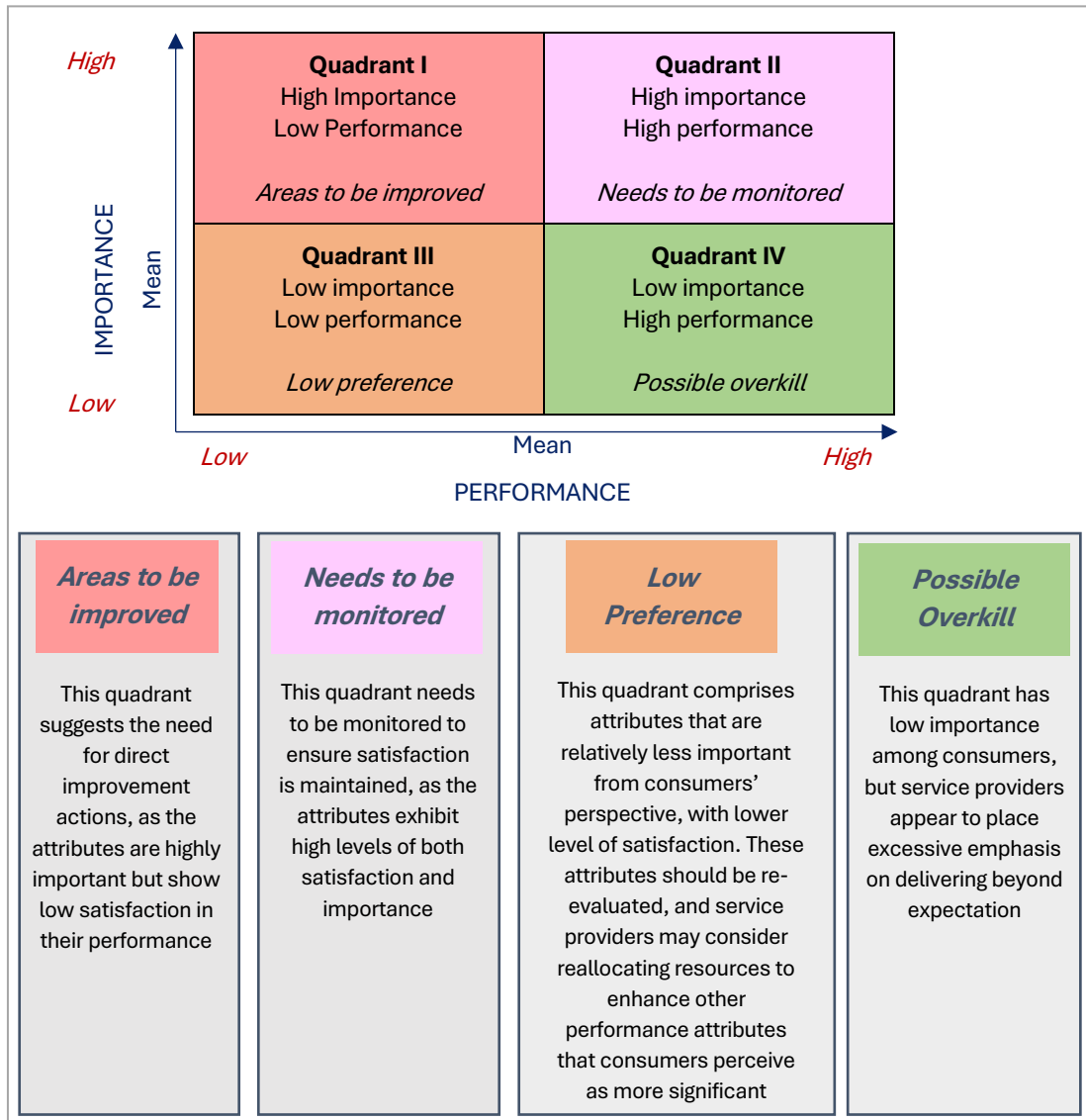


Figure 5: Importance-Performance Matrix

Main Findings

This section consists of four main findings as follows:

1. Overall CSI score for FBB and MBB consumers.
2. FBB consumers:
 - a. CSI score by scope;
 - b. Service Quality Gap Analysis;
 - c. Importance-Performance Analysis; and
 - d. Consumers' consumption pattern by service.
3. MBB consumers:
 - a. CSI score by criteria;
 - b. Service Quality Gap Analysis;
 - c. Importance-Performance Analysis; and
 - d. Consumers' consumption pattern by service.
4. Demographic profile for FBB and MBB consumers.

Overall CSI Score for FBB and MBB Consumers

Based on the survey data collected, the overall CSI score for FBB and MBB services were recorded at 3.83 and 3.70, respectively, as depicted in Figure 6.

These scores suggest that both FBB and MBB consumers expressed an adequate level of satisfaction with the services provided by their respective service providers, indicating a positive perception of the overall quality and performance of the services offered.



Figure 6: Overall CSI Score

FBB Consumers

CSI Score by Scope

A detailed year-on-year comparison revealed that video streaming experienced the most significant increase, with a rise of 0.19, indicating a notable improvement in consumer satisfaction. Following closely behind, web browsing saw a commendable increase of 0.16, reflecting a positive trend in user experience. Notably, among FBB consumers, web browsing garnered the highest satisfaction score (CSI of 4.14), making it the sole criterion falling within the Zone of Loyalty.

However, online gaming recorded the lowest satisfaction score, falling within the Zone of Defection. This disparity underscores the importance of addressing potential issues to enhance overall customer satisfaction for online gaming experience. For a more comprehensive understanding of the CSI scores across different criteria, please refer to Figure 7 below.

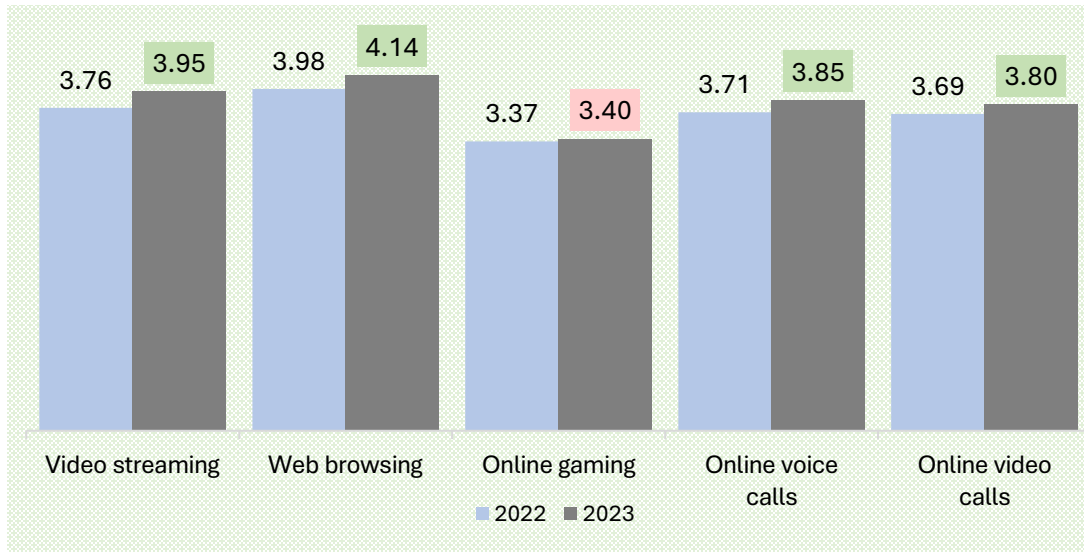


Figure 7: CSI Score by Scope for FBB Consumers

Service Quality Gap (SQG) Analysis

SQG Analysis was conducted to monitor consumers' expectations and satisfaction. Addressing these identified shortfalls is foundational for planning strategies to ensure customer experiences that align with their expectations, thereby increasing the likelihood of satisfaction.

Overall, the performance of FBB services improved, as indicated by a positive increase in the gap score compared to the previous year (2022: 0.02 vs. 2023: 0.06).

Further results revealed that the gap scores for four out of five scopes were less than zero, indicating that consumer expectations towards the services provided were not met. Topping the list was web browsing (Gap: -0.47), followed by online voice calls (Gap: -0.19), video streaming (Gap: -0.07), and online video calls (Gap: -0.02). Even though the overall CSI score is the lowest, online gaming experience exceeded consumers' expectations, with a gap score greater than 0.

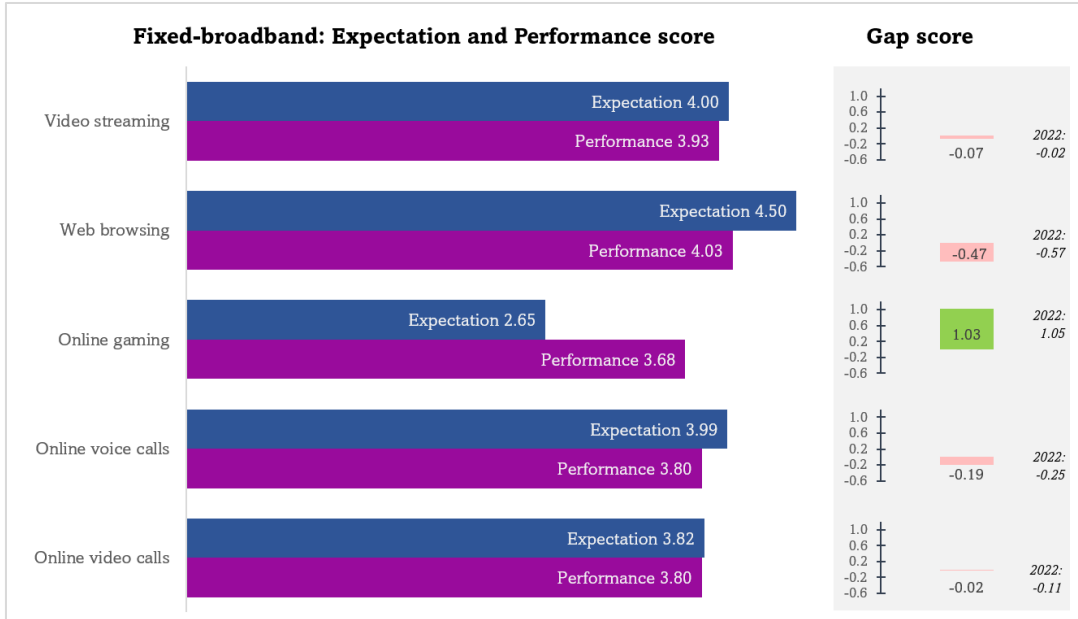


Figure 8: Service Quality Gap Analysis for FBB

Importance-Performance Analysis (IPA)

IPA was conducted to identify the attributes most in need of improvement and to ensure efficient allocation for services provided by service providers. The results of IPA were visualised in a four-quadrant matrix to categorise attributes: Quadrant I represents attributes needing improvement, Quadrant II includes attributes to be monitored, Quadrant III comprises attributes with low preference, and Quadrant IV indicates attributes with possible overkill.

Figure 9 illustrates the relative positions of attributes in matrix format, with importance values on the vertical axis and performance values on the horizontal axis.

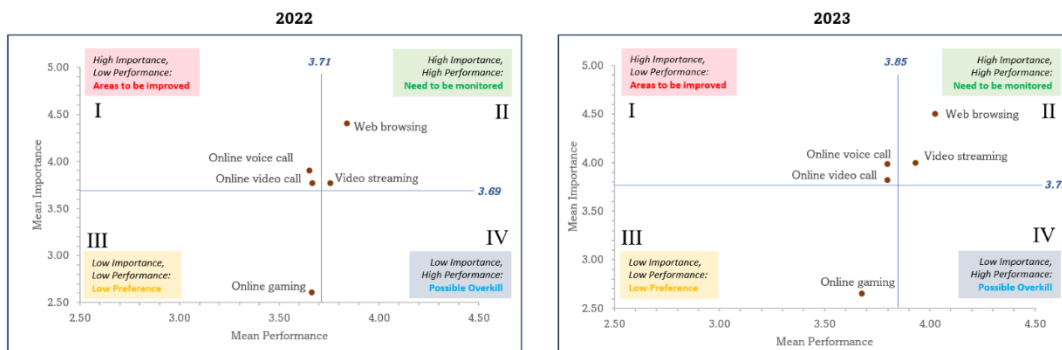


Figure 9: Importance-Performance Analysis for FBB

Overall, BQoES 2023 results showed that mean importance and mean performance for FBB were 3.79 and 3.85 respectively. All scopes remain in the same quadrant as 2022. From the IPA analysis, online voice call and online video call fell within Quadrant I; hence, these scopes require improvement to meet consumers' satisfaction.

Meanwhile, web browsing and video streaming continue to improve their scores, maintaining performance above average in Quadrant II (High importance, High performance). These scopes need to be monitored accordingly to sustain performance and customer satisfaction.

Consumers Consumption Pattern by Scope

Video Streaming

The survey further discovered that 95.0% of FBB consumers watched videos online, with nearly half (48.4%) of them streaming through YouTube, followed by Netflix and TikTok. Figure 10 shows that the percentage of consumers who streamed videos via Netflix and Facebook had slightly dropped, while TikTok climbed from fourth place in 2022 to third place in 2023, surpassing Facebook.

Although a high percentage of consumers streamed videos online, a small portion of 9.8% stated their dissatisfaction with the service. The most frustrating experience, mentioned by 58.9% of users, was video stalls and buffering (Figure 11).

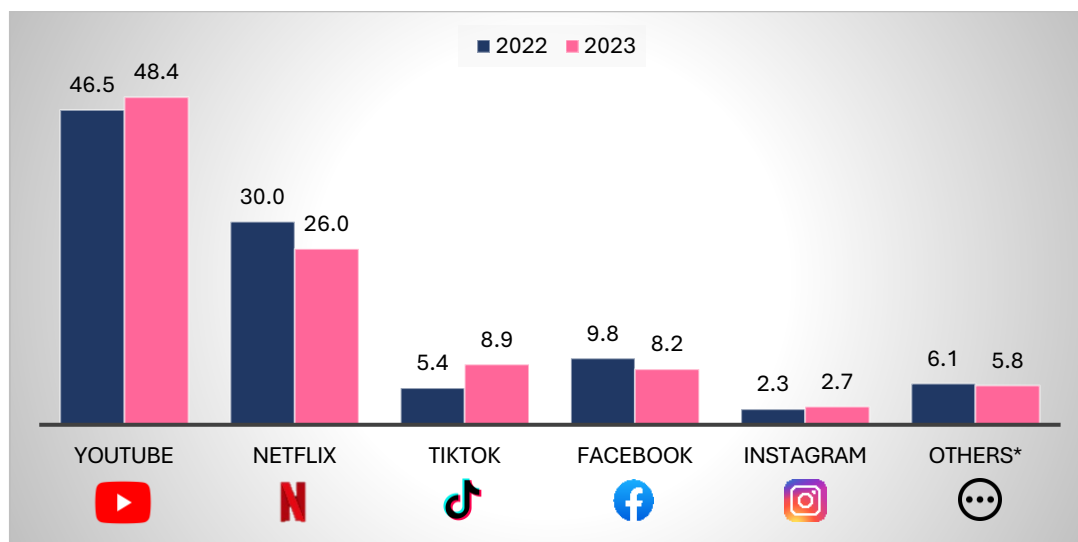


Figure 10: Video Streaming Experience by FBB Consumers (%)

*Includes Disney+ Hotstar, Astro Go, Viu, etc.

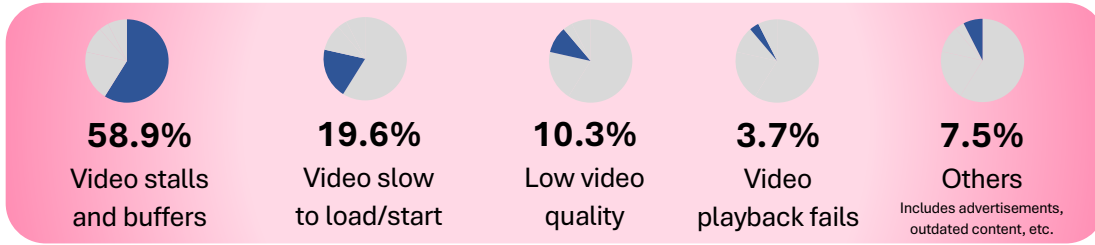


Figure 11: Main Reason for Video Streaming Dissatisfaction

Web Browsing

BQoES 2023 revealed that 57.0% of FBB consumers preferred to use web browser while 43.0% favoured application for their web browsing activities. Among those who preferred to use web browser, 71.7% browsed through Google Chrome followed by 13.4% through Safari. On the other hand, Shopee was the most popular application among FBB consumers (29.2%) followed by YouTube and Spotify with 12.8% and 7.9% respectively.

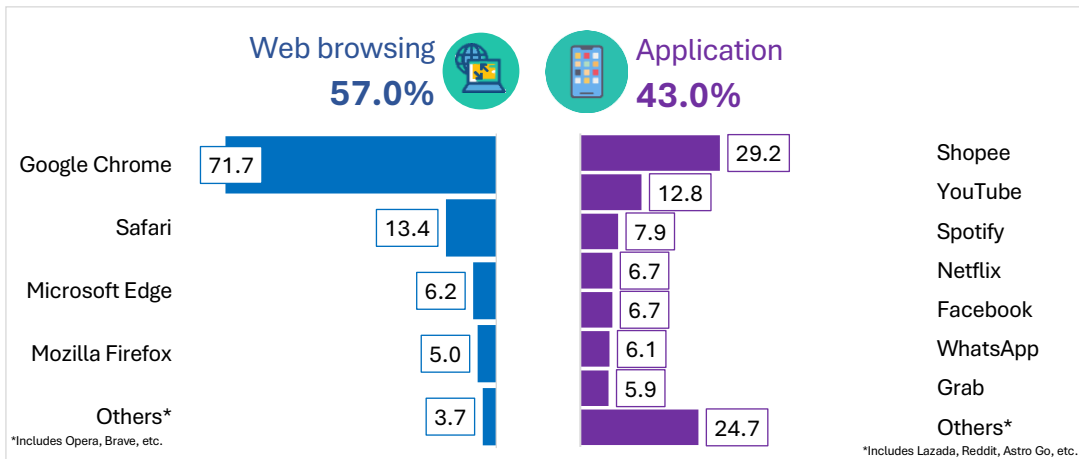


Figure 12: Web Browsing Experience by FBB Consumers (%)

Further analysis shows that the percentage of dissatisfied consumers with web browsing experience has declined from 6.9% to 6.0% year-on-year. The main reasons mentioned were disappointment with waiting for pages to load (40.6%) and slow download speed (24.6%).

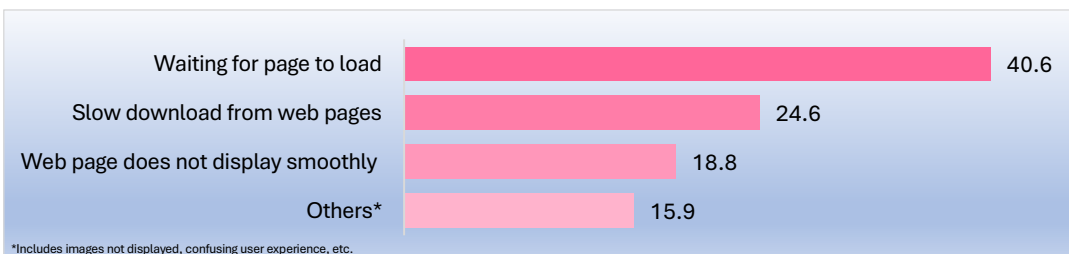


Figure 13: Main Reason for Web Browsing Dissatisfaction (%)

Online Gaming

Online gaming has become an integral part of modern entertainment, offering a dynamic and interactive experience for players across the world. BQoES 2023 found that the percentage of online gamers has increased from 38.6% in 2022 to 41.7% in 2023. The most popular online games among FBB consumers were Mobile Legends: Bang Bang (19.2%), DOTA 2 (7.9%), PlayerUnknown's Battlegrounds (6.5%), and FIFA Ultimate Team (6.3%). Among the least played online games by consumers were Call of Duty, Counter-Strike: Global Offensive, Roblox, Valorant, and Fortnite.

However, 14.8% of online gamers among FBB consumers expressed their dissatisfaction with the service, citing reasons such as latency and lag (41.9%) and animation stuttering (25.7%).

When asked about the devices they mainly used for playing online games, FBB consumers indicated that smartphones were the most prevalent (55.0%), followed by PC/laptop (31.5%), gaming consoles (8.1%), and smart TVs (5.4%).

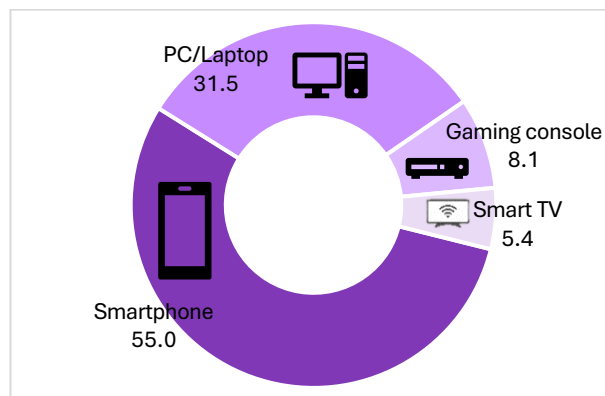


Figure 14: Device Used to Play Online Games (%)

Online Voice Calls

The survey also explored consumers' experiences with online voice calls. In 2023, 76.3% of FBB consumers reported having conducted online voice calls, with WhatsApp emerging as the most popular platform (82.4%), followed by FaceTime (5.2%).

Despite efforts to prioritise seamless broadband experiences, 10.1% of users expressed dissatisfaction with the online voice call service. Among those dissatisfied, 59.6% cited choppy voice as the main reason, while 24.7% were disappointed by dropped calls occurring during their conversations.

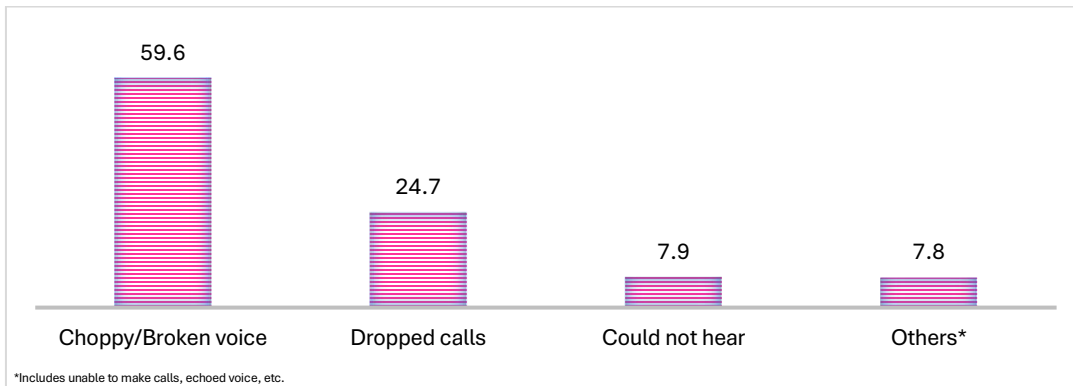


Figure 15: Main Reason for Online Voice Calls Dissatisfaction (%)

Online Video Calls

Figure 16 provides a detailed overview of the online video call experiences of FBB consumers. According to the survey, there was a 4.6 percentage point drop year-on-year in the percentage of FBB users engaging in online video calls. Among the 87.7% of FBB consumers who made online video calls, WhatsApp remained the most popular service, used by 65.8% of consumers. Interestingly, WhatsApp also maintained its position as the top app in terms of user satisfaction, whereas Teams (10.3%) rose from fourth place in 2022 to second place in 2023, surpassing FaceTime (7.8%) and Zoom (5.9%).

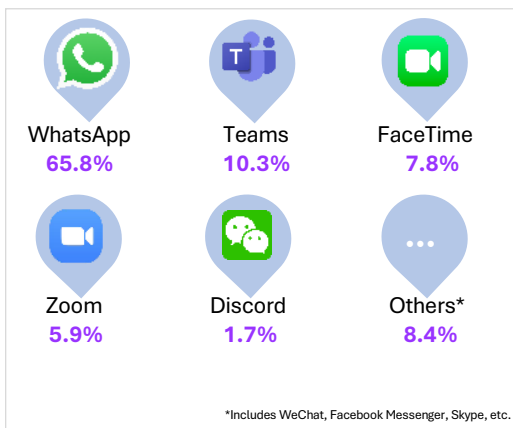


Figure 16: Online Video Calls Experience of FBB Consumers (%)

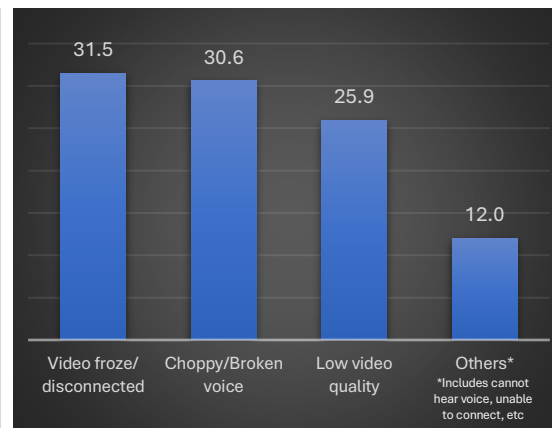


Figure 17: CSI Score by Scope for MBB Consumers

The survey also found that the percentage of dissatisfied users dropped by 1.2 percentage points year-on-year from 11.9% in 2022 to 10.7% in 2023, indicating an improvement in the quality and reliability of online video call services. Those who were dissatisfied with their online video call experience quoted video froze or disconnected (31.5%) and chippy voice (30.6%) were among the reasons for their dissatisfaction, as shown in Figure 17.

MBB Consumers

CSI Score by scope

For MBB consumers, the survey found that none of the criteria achieved CSI score more than 4.0, implying consumers were just adequately satisfied with all criteria. As illustrated in Figure 18, web browsing topped the list with CSI score of 3.97 followed by online voice calls (3.80) and online video calls (3.74) at second and third rank respectively.

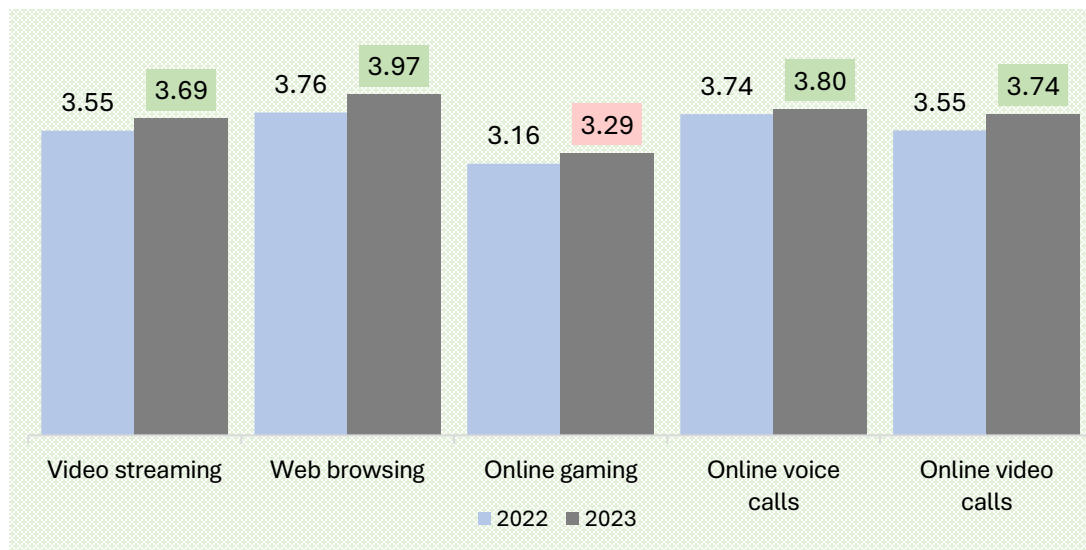


Figure 18: CSI Score by Scope for MBB Consumers

Service Quality Gap (SQG) Analysis

Overall, MBB improved their gap score year-on-year, but expectations were still not met. Out of five scopes assessed, online gaming was the only scope exceeded consumers' expectations (Gap score:0.93). The gap score for remaining four scopes is below 0, indicating consumers' expectations were not met. Highest gap score was observed in web browsing (-0.55) followed by online voice calls (-0.33).

In terms of gap score improvement, Online gaming had the highest improvement as compared to 2022, from 0.34 to 0.93 (+0.59) as a result of higher rating in service performance score. Figure 19 further illustrates the gap scores for MBB consumers.

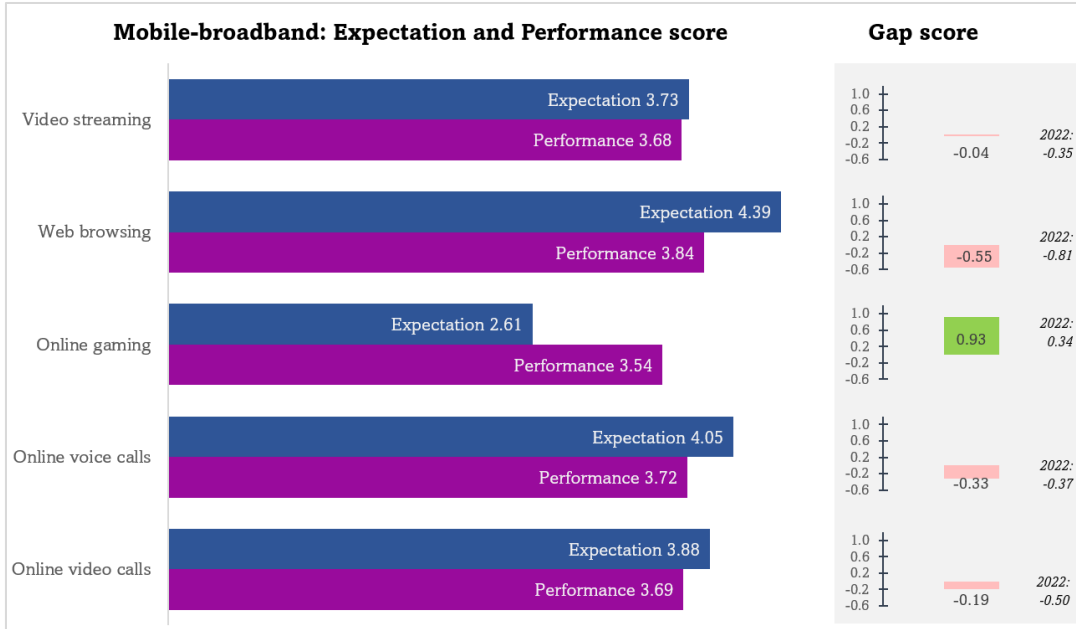


Figure 19: Service Quality Gap Analysis for MBB

Importance-Performance Analysis (IPA)

Further, results from IPA analysis showed that mean importance and mean performance for MBB were 3.73 and 3.70 respectively, as depicted in Figure 20 below. All scopes remain in the same quadrant as 2022. From the IPA analysis, online video call and video streaming were identified as areas of improvement as these scopes fall within Quadrant I (High importance, Low performance).

Meanwhile, web browsing and online voice call continue to improve its score to maintain the performance as above average in Quadrant II (High importance, High performance). These scopes need to be monitored accordingly to sustain the performance and customers’ satisfaction.

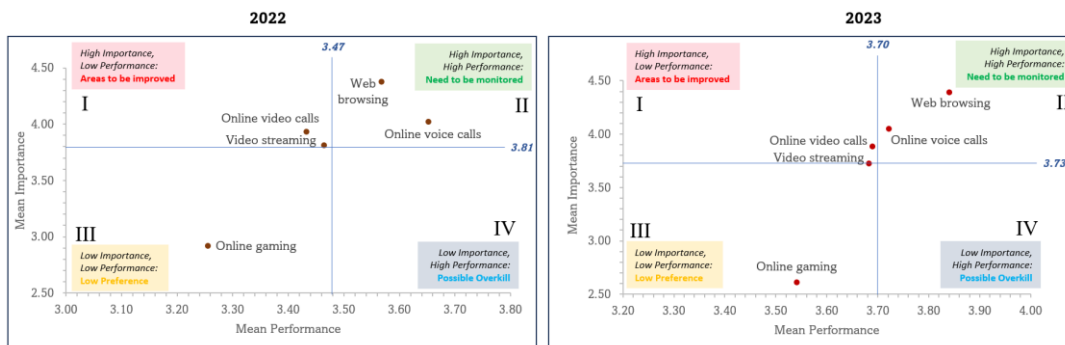


Figure 20: Importance-Performance Matrix Analysis for MBB

Consumers Consumption Pattern by Scope

Video Streaming

Percentage of MBB consumers watched videos online in 2023 decreased by 0.7 percentage points year-on-year from 94.6% to 93.9%. YouTube was the main platform for 40.6% consumers followed by TikTok (24.4%) and Facebook (14.1%). Netflix lost its share in 2023 and settled at fourth place with only 11.8% of consumers streamed Netflix as the main platform.

However, the percentage of dissatisfied users decreased by 2.9 percentage points year-on-year. In 2023, 13.9% of MBB consumers who streamed videos online were unhappy with their experience and 56.5% of them claimed video stalls and buffers was the main reason for their dissatisfaction.

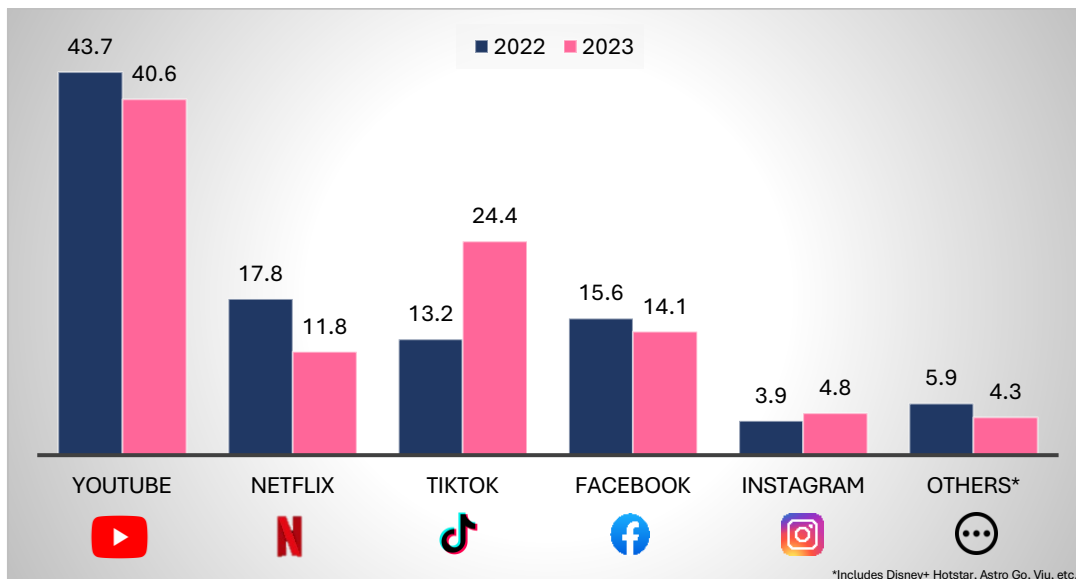


Figure 21: Video Streaming Experience by MBB Consumers (%)

Web Browser

BQoES 2023 revealed that 55.8% of MBB consumers preferred to use application while 44.2% favoured web browser for their web browsing activities.

Among those who preferred to use web browser, 75.5% browse through Google Chrome followed by 16.3% through Safari. On the other hand, Shopee was the most popular application among MBB consumers (36.8%) followed by Spotify and Grab with 5.8% and 5.3% respectively.

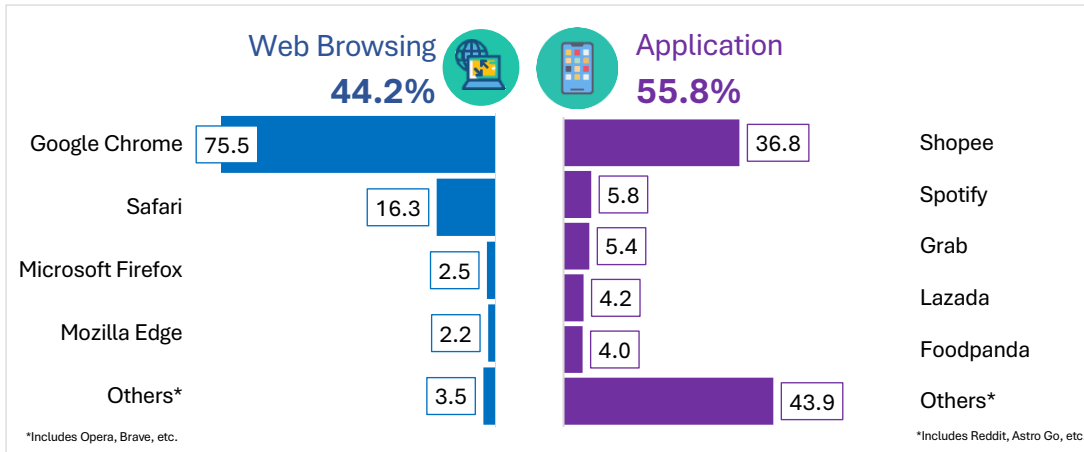


Figure 22: Web Browsing Experience by MBB Consumers (%)

Further analysis shows that percentage of dissatisfied consumers on web browsing experience has declined 4.9 percentage point year-on-year from 14.8% to 9.9%. Main reasons mentioned were disappointment of waiting for page to load (42.9%) and slow download (22.6%).

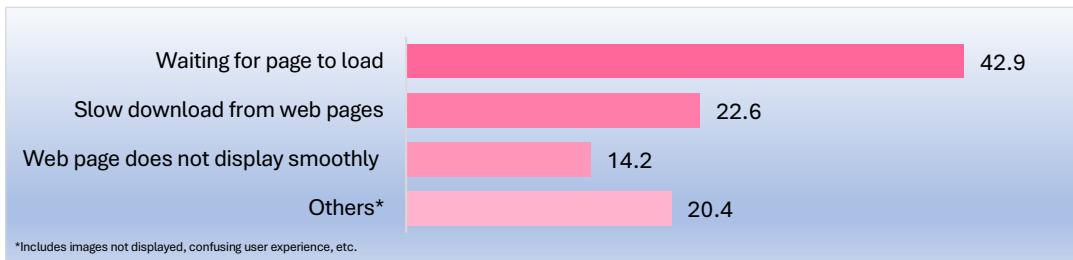


Figure 23: Main Reason for Web Browsing Dissatisfaction (%)

Online Gaming

BQoES 2023 observed that percentage of online gamers among MBB consumers has slightly dropped from 46.2% in 2022 to 44.8% in 2023. The most popular online games among MBB consumers were Mobile Legend: Bang Bang (31.0%), PlayerUnknown's Battlegrounds (13.2%), Call of Duty (6.5%) and FIFA Ultimate Team (3.5%). Among the least played online games by MBB consumers were DOTA 2, Counter-Strike: Global Offensive, Roblox and Fortnite.

However, dissatisfaction among MBB consumers who engage in online gaming was reported at 16.4%, with reasons such as animation stuttering (34.3%) and latency/lag (26.6%) being cited as primary concerns.

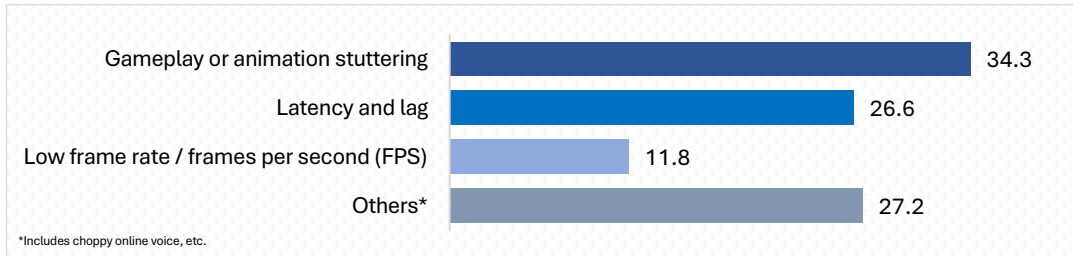


Figure 24: Main Reason for Online Gaming Dissatisfaction (%)

Online Voice Calls

The survey also investigated consumers' experiences with online voice calls. In 2023, 87.5% of MBB consumers reported engaging in online voice calls, with WhatsApp emerging as the most popular platform (92.1%), followed by FaceTime (3.3%).

Despite efforts to prioritise seamless broadband experiences, 14.4% of users still expressed dissatisfaction with the online voice call service. Among the reasons cited, 50.5% mentioned choppy voice quality as the primary concern, while 23.2% were disappointed by dropped calls occurring during conversations.

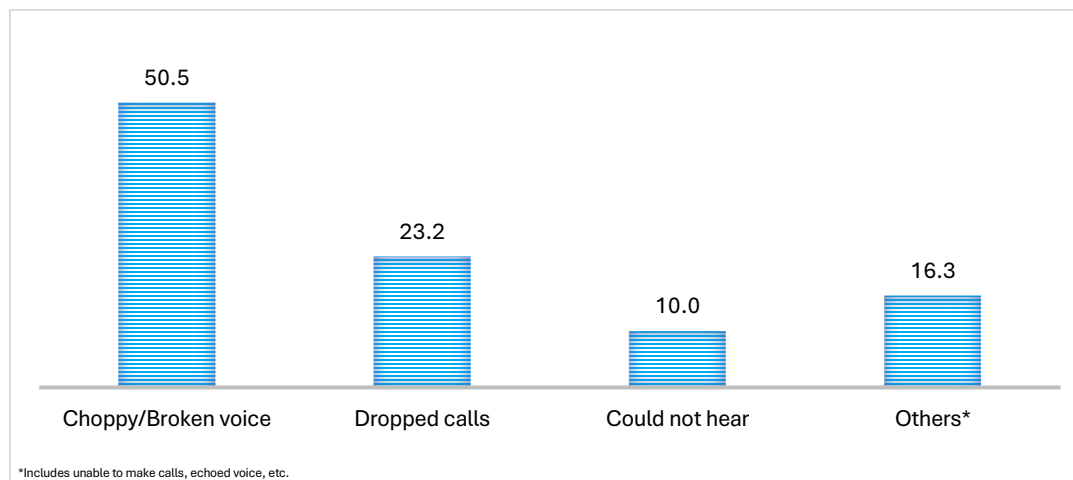


Figure 25: Main Reason for Online Voice Calls Dissatisfaction (%)

Online Video Calls

Figure 26 provides a detailed overview of the online video call experience among MBB consumers. The survey revealed that out of the 91.3% of MBB consumers who engaged in online video calls, WhatsApp remained the most popular apps (82.0%), followed by FaceTime (6.4%) and Zoom (2.9%).

The survey also noted a decrease of 3.3 percentage points in the percentage of dissatisfied users' year-on-year, dropping from 18.2% in 2022 to 14.9% in 2023. This suggests an improvement in the quality and reliability of online video call services.

Among those dissatisfied with their online video call experience, reasons cited included video freezing or disconnection (37.7%) and low video quality (22.0%).

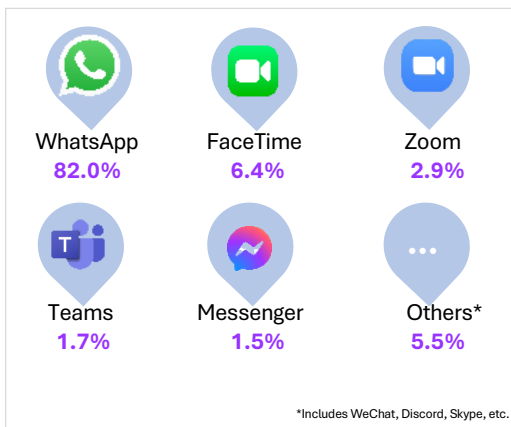


Figure 26: Online Video Call Experience by MBB Consumers (%)

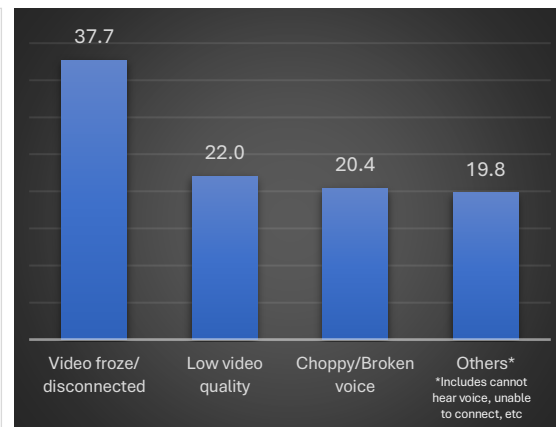


Figure 27: Main Reason for Online Video Call Dissatisfaction (%)

Demographic Profile for FBB and MBB Consumers

FBB Consumers

BQoES 2023 results reflect the demographic profile of adults, with 62.0% of FBB consumers falling within the age range of 30s and 40s. Nearly half of FBB consumers (43.5%) reported earning below RM4,850 as their average monthly income. In terms of employment status, 83.3% were working individuals, including both employed and self-employed individuals. These findings suggest that subscribers to fiber broadband services are typically financially stable individuals.

There was a notable gender gap, with male consumers accounting for 74.2% and female consumers accounting for 25.8% of the total. Additionally, the survey revealed a significant disparity in the distribution of FBB consumers between urban and rural areas. The majority of consumers (88.2%) were located in urban areas, while only 11.8% resided in rural areas.

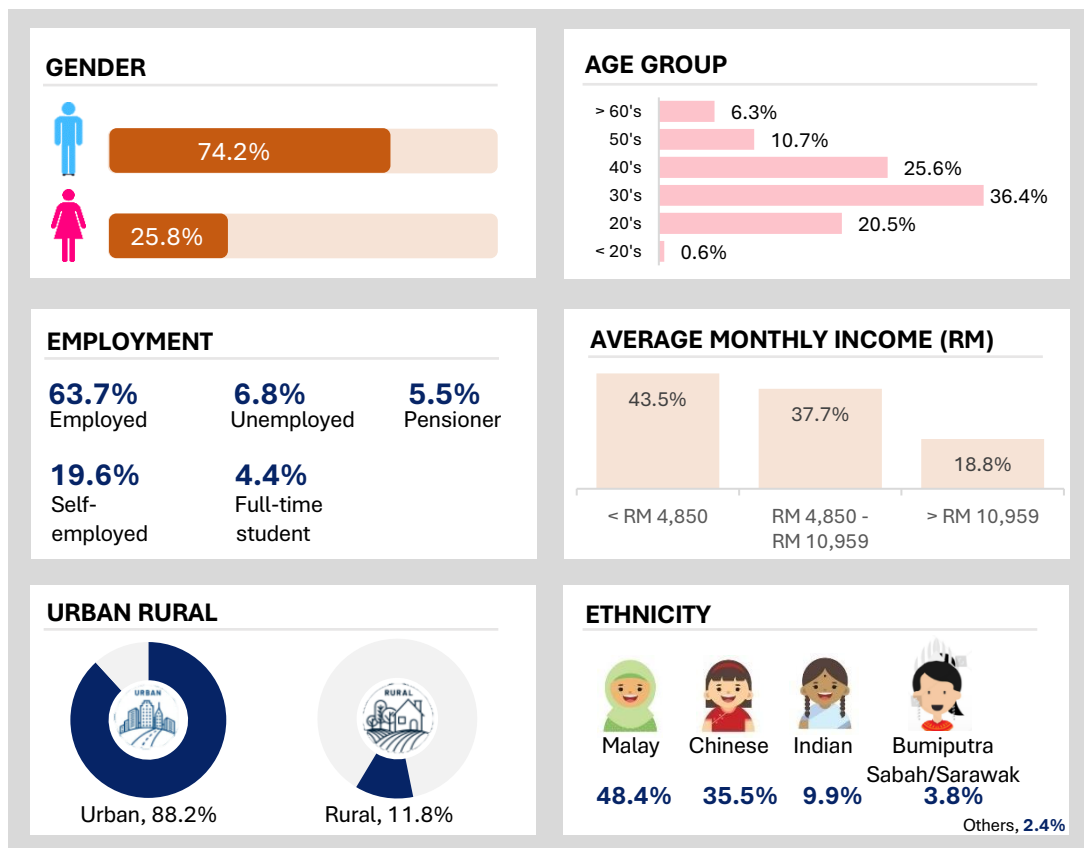


Figure 28: Demographic Profile of FBB Consumers

MBB Consumers

The survey revealed that MBB consumers were predominantly young adults, with those in their 20s and 30s accounting for 64.3% of the total. In terms of average monthly income, the highest distribution of MBB consumers was observed in the income bracket of RM4,850 (67.2%).

Regarding employment status, 76.9% of MBB consumers were working individuals, which is slightly lower than the percentage observed for FBB consumers. However, full-time students and unemployed individuals accounted for a slightly higher proportion of MBB consumers compared to FBB consumers (19.7% vs. 11.2%). These findings suggest that MBB is perceived as an affordable service, as it attracts more young people and dependents.

There was a notable gender gap, with male consumers accounting for 69.9% and female consumers accounting for 30.1% of the total. Additionally, the survey revealed a significant disparity in the distribution of MBB consumers between urban and rural areas. The majority of consumers (75.2%) used the service in urban areas, while 24.8% resided in rural areas.

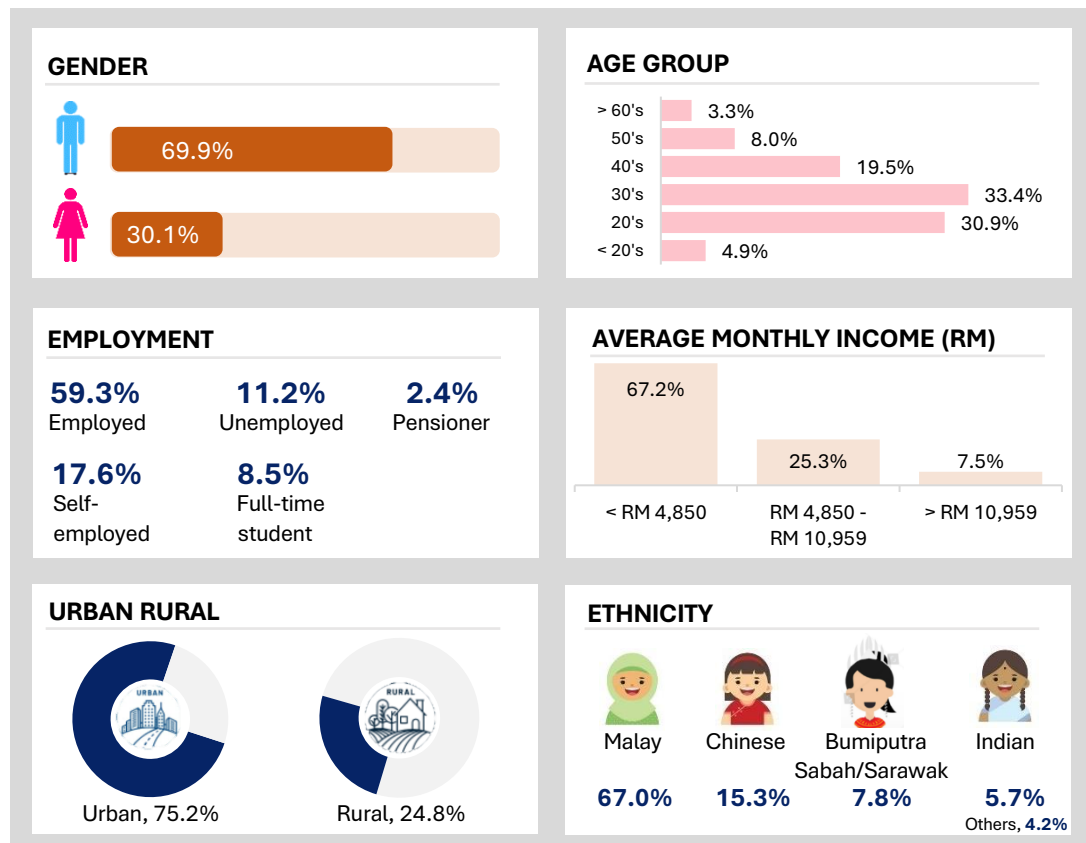


Figure 29: Demographic Profile of MBB Consumers

Conclusion

The BQoES 2023 report indicates that FBB consumers express slightly higher satisfaction levels with the service (CSI: 3.83) compared to MBB consumers (CSI: 3.70). Nevertheless, both services have shown improvement in the CSI score from the previous year. Interestingly, both sets of consumers consistently rated web browsing as the most satisfying experience, with a CSI score of 4.14 for FBB consumers and 3.97 for MBB consumers.

Conversely, online gaming emerged as the scope with the lowest CSI score. However, SQG results showed a positive gap, indicating that service performance exceeded consumers' expectations in this area. Notably, both FBB and MBB consumers reported the widest gap between satisfaction and importance for web browsing experiences (FBB: -0.47, MBB: -0.55).

Furthermore, the survey has highlighted three critical scopes for both services that require immediate attention: online video calls, online voice calls, and video streaming. Neglecting these aspects could result in a significant decline in consumer satisfaction levels. To effectively address this challenge, service providers should consistently work to bridge the performance gap between consumers' expectations and their actual broadband experience.

Moreover, educating consumers about factors affecting broadband quality, such as device performance, storage optimisation, and suitable Internet packages, is crucial. Consumers should be made aware that their broadband experience can be influenced by various factors including device type, age, condition, available storage, and package compatibility with their needs. By providing this information, service providers can empower consumers to make better choices and optimise their broadband experience.

Finally, improving consumer experience requires a holistic approach that goes beyond merely enhancing network quality. By strategically partnering with content providers, SPs can optimize content delivery, manage bandwidth more effectively, and offer diverse, localized content. These initiatives will not only address the root causes of consumer dissatisfaction but also position SPs as proactive enablers of high-quality digital experiences. Embracing such partnerships is crucial to achieving sustained consumer satisfaction and loyalty.

Tables

Caution is required in the use of the estimates tabulated below.

While MCMC takes every precaution to minimise non-sampling errors, which cannot be quantified, the estimates presented are also subject to sampling error, which is a measure of the chance variation that occurs because only a sample of the population is canvassed and not the entire population. The sampling error of an estimate is usually expressed as a percentage of that estimate to give the Relative Sampling Error (RSE) of that estimate.

Generally, estimates with smaller values tend to have higher RSEs. As a guide, estimates with RSEs of 25% or less are considered reliable for general use. Estimates with RSEs greater than 25% but less than or equal to 50% are marked with a single asterisk (*) in the tables and should be used cautiously. Estimates with RSEs greater than 50% are marked with two asterisks (**) and are deemed too unreliable for general use. However, these estimates may be aggregated with others until an RSE of less than 25% is achieved.

Confidence intervals for very small estimates should be based on the binomial distribution rather than the normal approximation to the binomial. As an alternative, the method of Korn and Graubard, 1998 may also be used. Percentages may not add up to 100 because of rounding.

FIXED BROADBAND (FBB)

Table 4: Gender

Gender	Distribution (%)	RSE
Male	74.2	1.7
Female	25.8	5.0

Table 5: Age Group

Age group	Distribution (%)	RSE
Below 20's	0.6	37.7*
20's	20.5	5.8
30's	36.4	3.9
40's	25.6	5.0
50's	10.7	8.5
> 60's	6.3	11.4

Table 6: Employment

Employment Category	Distribution (%)	RSE
Employed	63.7	2.2
Self employed	19.6	6.0
Unemployed	6.8	10.9
Pensioner	5.5	12.2
A full-time student	4.4	13.7

Table 7: Average Monthly Income

Income Category	Distribution (%)	RSE
Below RM 4,850	43.5	3.4
RM 4,850 – RM 10,959	37.7	3.9
RM 10,960 and above	18.8	6.3

Table 8: Ethnicity

Ethnicity	Distribution (%)	RSE
Malay	48.6	3.0
Chinese	35.6	4.0
Indian	10.4	8.7
Bumiputra Sabah / Sarawak	3.8	14.8
Others	1.6	23.4

Table 9: Area of Living

Area	Distribution (%)	RSE
Urban	88.2	1.1
Rural	11.8	8.1

Table 10: Video Streaming Activity

Activity	Distribution (%)	RSE
Stream video online	95.0	0.7
Does not stream video online	5.0	12.8

Table 11: Video Streaming Platform Mainly Used

Platform	Distribution (%)	RSE
YouTube	48.4	3.1
Netflix	26.0	5.1
TikTok	8.9	9.7
Facebook	8.2	10.1
Instagram	2.7	18.0
Others	5.8	16.2

Table 12: Video Streaming Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	2.1	20.2
Not important	6.5	11.2
Neutral	19.4	6.0
Important	31.0	4.4
Extremely important	41.0	3.5

Table 13: Video Streaming Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	2.1	20.6
Not satisfied	7.7	10.5
Neutral	20.7	5.9
Satisfied	32.4	4.4
Extremely satisfied	37.2	3.9

Table 14: Video Streaming Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
The video stalls and buffers	58.9	8.1
The video is slow to load up and start	19.6	19.6
Low video quality	10.3	28.6*
Video playback fails / error message	3.7	49.1*
Others	7.5	34.0*

Table 15: Web Browsing Platform Mainly Used

Platform	Distribution (%)	RSE
Web browser	57.0	2.6
Apps	43.0	3.4

Table 16: Web Browser Mainly Used

Web Browser	Distribution (%)	RSE
Google Chrome	71.7	2.5
Safari	13.4	9.9
Microsoft Edge	6.2	15.1
Mozilla Firefox	5.0	17.0
Others	3.7	20.0

Table 17: Apps Mainly Used for Web Browsing

Apps	Distribution (%)	RSE
Shopee	29.2	7.0
YouTube	12.8	11.8
Spotify	7.9	15.4
Netflix	6.7	16.8
Facebook	6.7	16.8
WhatsApp	6.1	17.7
Grab	5.9	18.0
Others	24.7	7.8

Table 18: Mainly Visited Website

Website	Distribution (%)	RSE
Google.com	82.2	1.8
Shopee.com.my	7.7	13.6
YouTube.com	3.4	21.0
Lazada.com.my	2.6	23.9
Others	4.1	18.8

Table 19: Web Browsing Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	0.8	33.2*
Not important	1.1	27.6*
Neutral	6.8	10.9
Important	25.0	5.1
Extremely important	66.3	2.1

Table 20: Web Browsing Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	1.6	23.4
Not satisfied	4.4	13.7
Neutral	20.0	5.9
Satisfied	32.8	4.2
Extremely satisfied	41.2	3.5

Table 21: Web Browsing Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Waiting for the page to load	40.6	14.6
Slow download from the pages	24.6	21.1
Web page does not display smoothly	18.8	25.0*
Others	15.9	27.6*

Table 22: Online Gaming Activity

Activity	Distribution (%)	RSE
Play online game	41.7	3.5
Does not play online games	58.3	2.5

Table 23: Most Played Online Games

Online Games	Distribution (%)	RSE
Mobile Legends: Bang Bang	19.2	9.4
DOTA 2	7.9	15.6
PlayerUnknown's Battlegrounds (PUBG)	6.5	17.4
FIFA Ultimate Team (FUT)	6.3	17.7
Others	60.2	3.7

Table 24: Online Gaming Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	30.6	4.4
Not important	21.8	5.6
Neutral	19.1	6.1
Important	13.3	7.5
Extremely important	15.3	6.9

Table 25: Online Gaming Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	4.8	20.3
Not satisfied	10.0	13.7
Neutral	25.6	7.8
Satisfied	23.3	8.3
Extremely satisfied	36.3	6.1

Table 26: Online Gaming Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Latency and lag	41.9	13.7
Gameplay or animation stuttering	25.7	19.8
Others	32.4	16.8

Table 27: Main Device Used for Online Gaming

Device	Distribution (%)	RSE
Smartphone	55.0	4.1
PC/Laptop	31.5	6.7
Gaming console	8.1	15.3
Smart TV	5.4	19.1

Table 28: Online Voice Call Activity

Activity	Distribution (%)	RSE
Make online voice call	76.3	1.6
Does not make online voice call	23.7	5.3

Table 29: Online Voice Call Platform Mainly Used

Platform	Distribution (%)	RSE
WhatsApp	82.4	1.6
FaceTime	5.2	14.4
Others	12.4	9.0

Table 30: Online Voice Call Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	5.3	12.5
Not important	6.8	10.9
Neutral	15.5	6.9
Important	29.1	4.6
Extremely important	43.4	3.4

Table 31: Online Voice Call Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	2.0	23.3
Not satisfied	8.1	11.4
Neutral	24.5	5.9
Satisfied	33.7	4.7
Extremely satisfied	31.7	4.9

Table 32: Online Voice Call Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Voices are choppy or broken	59.6	8.7
Dropped calls	24.7	18.5
Others	15.7	24.5

Table 33: Online Video Call Activity

Activity	Distribution (%)	RSE
Make online video call	87.7	1.1
Does not make online video call	12.3	7.9

Table 34: Online Video Call Platform Mainly Used

Platform	Distribution (%)	RSE
WhatsApp	65.8	2.3
Microsoft Teams	10.3	9.3
FaceTime	7.8	10.8
Others	16.0	7.3

Table 35: Online Video Call Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	4.2	14.1
Not important	7.6	10.2
Neutral	23.1	5.4
Important	30.3	4.5
Extremely important	34.8	4.0

Table 36: Online Video Call Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	2.0	22.1
Not satisfied	8.7	10.2
Neutral	25.0	5.5
Satisfied	32.7	4.5
Extremely satisfied	31.7	4.6

Table 37: Online Video Call Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Freezing or disconnected video	31.5	14.2
Voices are choppy or broken	30.6	14.5
Low video quality	25.9	16.3
Others	12.0	26.0*

Table 38: Main Device Used for Online Video Call

Device	Distribution (%)	RSE
PC/Laptop	20.4	6.2
Smartphone	76.9	1.7
Smart TV	2.7	19.0

MOBILE BROADBAND (MBB)

Table 39: Gender

Gender	Distribution (%)	RSE
Male	69.9	1.4
Female	30.1	3.2

Table 40: Age Group

Age Group	Distribution (%)	RSE
Below 20's	4.9	9.2
20's	30.9	3.1
30's	33.4	2.9
40's	19.5	4.2
50's	8.0	7.1
> 60's	3.3	11.2

Table 41: Employment

Employment Category	Distribution (%)	RSE
Employed	60.0	1.7
Self employed	17.6	4.5
Unemployed	11.4	5.8
A full-time student	8.6	6.8
Pensioner	2.4	13.2

Table 42: Average Monthly Income

Income Category	Distribution (%)	RSE
Below RM 4,850	67.2	1.5
RM 4,850 – RM 10,959	25.3	3.6
RM 10,960 and above	7.5	7.4

Table 43: Ethnicity

Ethnicity	Distribution (%)	RSE
Malay	67.0	1.5
Chinese	15.3	4.9
Bumiputra Sabah / Sarawak	7.8	7.2
Indian	5.7	8.5
Others	4.0	10.0

Table 44: Area of Living

Area	Distribution (%)	RSE
Urban	75.2	1.2
Rural	24.8	3.6

Table 45: Video Streaming Activity

Activity	Distribution (%)	RSE
Stream video online	93.9	0.5
Does not stream video online	6.1	8.2

Table 46: Video Streaming Platform Mainly Used

Platform	Distribution (%)	RSE
YouTube	40.6	2.6
TikTok	24.4	3.8
Facebook	14.1	5.3
Netflix	11.8	5.9
Instagram	4.8	9.6
Others	4.3	10.1

Table 47: Video Streaming Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	4.5	9.6
Not important	10.5	6.1
Neutral	21.0	4.0
Important	34.8	2.9
Extremely important	29.3	3.2

Table 48: Video Streaming Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	3.8	10.8
Not satisfied	10.1	6.4
Neutral	21.5	4.1
Satisfied	41.7	2.5
Extremely satisfied	22.9	3.9

Table 49: Video Streaming Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
The video stalls and buffers	56.5	5.0
The video is slow to load up and start	22.2	10.7
Video playback fails / error message	9.2	18.0
Low video quality	7.2	20.5
Others	4.9	25.2*

Table 50: Web Browsing Platform Mainly Used

Platform	Distribution (%)	RSE
Web browser	44.2	2.3
Apps	55.8	1.9

Table 51: Web Browser Mainly Used

Web Browser	Distribution (%)	RSE
Google Chrome	75.5	1.8
Safari	16.3	7.1
Mozilla Firefox	2.5	19.8
Microsoft Edge	2.2	21.1
Others	3.5	16.4

Table 52: Apps Mainly Used for Web Browsing

Apps	Distribution (%)	RSE
Shopee	36.8	3.8
Spotify	5.8	9.4
Grab	5.4	11.3
Lazada	4.2	11.7
Foodpanda	4.0	13.3
Others	43.9	3.2

Table 53: Mainly Visited Website

Website	Distribution (%)	RSE
Google.com	75.7	1.7
Shopee.com.my	9.8	8.9
Wikipedia.org	2.4	18.7
Lazada.com.my	2.0	20.2
Others	10.0	8.7

Table 54: Web Browsing Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	1.1	19.9
Not important	2.3	13.4
Neutral	7.2	7.5
Important	32.9	3.0
Extremely important	56.5	1.8

Table 55: Web Browsing Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	3.3	11.4
Not satisfied	6.6	7.9
Neutral	19.6	4.2
Satisfied	42.6	2.4
Extremely satisfied	28.0	3.3

Table 56: Web Browsing Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Waiting for the page to load	42.9	7.7
Slow download from the pages	22.6	12.3
Web page does not display smoothly	14.2	16.4
Others	20.4	13.2

Table 57: Online Gaming Activity

Activity	Distribution (%)	RSE
Play online game	44.8	2.3
Does not play online games	55.2	1.9

Table 58: Most Played Online Games

Online Games	Distribution (%)	RSE
Mobile Legends: Bang Bang	31.0	4.6
DOTA 2	13.2	8.0
PlayerUnknown's Battlegrounds (PUBG)	6.5	11.8
FIFA Ultimate Team (FUT)	3.5	16.4
Others	45.8	3.4

Table 59: Online Gaming Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	31.9	3.0
Not important	18.2	4.4
Neutral	19.4	4.3
Important	15.3	4.9
Extremely important	15.1	4.9

Table 60: Online Gaming Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	6.1	12.2
Not satisfied	10.3	9.2
Neutral	25.9	5.3
Satisfied	34.2	4.3
Extremely satisfied	23.5	5.6

Table 61: Online Gaming Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Gameplay or animation stuttering	34.3	10.6
Latency and lag	26.6	12.8
Others	39.1	9.6

Table 62: Main Device Used for Online Gaming

Device	Distribution (%)	RSE
Smartphone	90.3	1.0
PC/Laptop	6.5	11.8
Smart TV	1.6	24.1
Gaming console	1.6	24.8

Table 63: Online Voice Call Activity

Activity	Distribution (%)	RSE
Make online voice call	87.5	0.8
Does not make online voice call	12.5	5.5

Table 64: Online Voice Call Platform Mainly Used

Platform	Distribution (%)	RSE
WhatsApp	92.1	0.7
FaceTime	3.3	12.1
Others	4.6	10.1

Table 65: Online Voice Call Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	0.8	11.4
Not important	3.3	7.7
Neutral	9.9	5.3
Important	31.6	3.0
Extremely important	54.3	2.3

Table 66: Online Voice Call Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	4.2	10.7
Not satisfied	10.2	6.6
Neutral	19.8	4.5
Satisfied	41.3	2.7
Extremely satisfied	24.6	3.9

Table 67: Online Voice Call Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Voices are choppy or broken	50.5	5.8
Dropped calls	23.2	10.7
Others	26.3	9.8

Table 68: Online Video Call Activity

Activity	Distribution (%)	RSE
Make online video call	91.3	0.6
Does not make online video call	8.7	6.8

Table 69: Online Video Call Platform Mainly Used

Platform	Distribution (%)	RSE
WhatsApp	82.0	1.0
FaceTime	6.4	8.3
Zoom	2.9	12.6
Others	8.7	7.1

Table 70: Online Video Call Importance Level

Level of Importance	Distribution (%)	RSE
Extremely not important	4.4	9.7
Not important	7.8	7.2
Neutral	17.9	4.5
Important	35.5	2.8
Extremely important	34.3	2.9

Table 71: Online Video Call Satisfaction Level

Level of Satisfaction	Distribution (%)	RSE
Extremely not satisfied	4.3	10.3
Not satisfied	10.6	6.3
Neutral	20.8	4.3
Satisfied	41.0	2.6
Extremely satisfied	23.3	4.0

Table 72: Online Video Call Reasons of Dissatisfaction

Reasons	Distribution (%)	RSE
Freezing or disconnected video	37.7	7.3
Low video quality	22.0	10.6
Voices are choppy or broken	20.4	11.1
Others	19.8	12.5

Table 73: Main Device Used for Online Video Call

Device	Distribution (%)	RSE
Smartphone	94.6	0.5
PC/Laptop	3.7	11.2
Smart TV	1.6	17.0
Gaming console	0.1	57.7**

List of Abbreviations

BQoES	Broadband Quality of Experience Survey
CATI	Computer-Assisted Telephone Interview
CSI	Consumer Satisfaction Index
FBB	Fixed Broadband
IPA	Importance-Performance Analysis
JENDELA	Jalanan Digital Negara
MBB	Mobile Broadband
MSISDN	Mobile Station International Subscriber Directory Number
RSE	Relative Sampling Error
SP	Service Provider
SQG	Service Quality Gap