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White Paper

AN ANALYSIS OF THE USE OF SPEAKER MODE IN
SMARTPHONES AND CONSUMER TRENDS

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Speaker Mode Consumer User Survey

Introduction

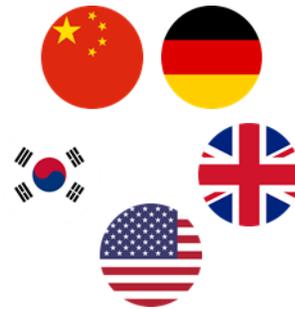
A user survey was commissioned by Cirrus Logic and carried out by SAR Insight & Consulting. This survey was carried out in order to better understand how users interact with audio on their smartphones, in particular their use of speaker mode.

Survey coverage

The survey covered a whole range of questions aimed at identifying consumers' impressions of the importance of speaker-mode when using a smartphone, and in what situations it mattered most to them. It also aimed to uncover any trends that point to consumer behavior when listening to audio on their phones and any use cases where consumers are increasing their usage of audio or especially concerned about quality of audio.

The survey was carried out across five geographical regions:

- China
- South Korea
- U.S.
- Germany
- U.K.



More than 300 people were surveyed per region, totaling 1,722 results.

Questions

10 main questions were asked, alongside some sub-questions. More details are available in the [appendix](#).

1. Thinking about a typical day in your life, please tell us how long you spend doing the following activities on your smartphone.
2. Please tell us how you listen to the following content on your smartphone.
3. What other situations or apps do you use speaker mode for on your smartphone?
4. Why do you choose to use speaker mode for listening to this content?
5. Thinking about the audio or video content you listen to or watch on social media apps, have you used speaker mode on your smartphone to share this content with family or friends in the last 12 months?
6. Thinking about how frequently you use speaker mode on your smartphone each day, please select the statement which best applies to you.

7. What particular scenarios, or apps, are compelling you to use speaker mode on your phone more than before?
8. What would make you choose not to use your phone in speaker mode?
9. Thinking about your current smartphone, how satisfied are you with the audio quality of the built-in speaker(s) or use in speaker mode?
10. Thinking about the smartphones you have owned, personally, has audio become a more or less important factor in your purchase decision-making process?

Survey Results and Analysis

Summary

The survey of more than 1,700 people in five countries showed that people are using speaker mode more often and for a variety of activities. This has become more pronounced during 2020 and the Covid-19 outbreak as more people are isolated at home, using their mobile devices more and needing to share audio, multi-task while working and more. We expect this trend to continue beyond the pandemic as more people working from home becomes part of the new normal.

This survey presents great news for consumers who are increasingly using their smartphones in speaker mode for a variety of activities that are better enjoyed with high-quality audio. As more smartphones with higher quality audio output hit the market, consumers will benefit from an increasingly immersive and enjoyable audio experience.

Those OEMs that are serious about audio quality and giving their customers great sounding devices should pay attention to the results of this survey. Speaker mode is important for many users across the globe and for a wide range of activities. Choosing the right speaker amplifier, as part of a high-end audio signal chain, will determine whether or not their brand will be recognized for audio quality.

This survey, and SAR's other research on the audio speaker amplifier market, demonstrates that there are some key trends emerging, including a need for higher power and improved audio quality to enable enhanced speaker mode for the next generation of mobile devices. OEMs that understand the importance of audio and the need for high-end amplifiers to drive those speakers, have the opportunity to differentiate and give consumers unique audio experiences.

Smartphone activities and time spent

The survey asked respondents to say how long they spent on various audio-related activities in a typical day, covering music, podcasts, movies, video calls, gaming, voice messages, phone calls and social media.

There were widely varying responses across activities and across the different regions. As perhaps expected, activities such as phone calls and voice messages take up less time than speaker mode-friendly activities, such as listening to music, watching movies/TV content and social media.

Key insights:

- 70%-80% of 1,722 respondents say they do all but one of those activities for 30 minutes+ each day.
- People in China and South Korea typically spend >30 minutes listening to music, watching movies or TV, gaming and social media.
- In the U.S., Germany and U.K., many people spend <60 minutes on most activities, with most time spent watching movies or TV.
- Across all countries time spent on phone calls is relatively short, with more than $\frac{3}{4}$ of respondents saying they spent less than an hour a day.

Listening to content

Speaker mode was shown to be popular for sharing social media content, watching movies/TV, gaming and video calls. All of these activities were highlighted as those that people spend more time on.

All countries showed high usage of speaker mode for social media, which is likely to be due to the more spontaneous nature of social media posts; those that may typically use headphones are less likely to put headphones on in these instances.

Key insights:

- 84% of our sample listened to music every day on their smartphone, and approximately half of this group told us they liked to do so via speaker mode.
- Unsurprisingly, given the mobile-centric nature of the country's population, a higher share of Chinese respondents reports a preference for sharing and listening to content on speaker mode.

Other use cases

This was an open-ended question that resulted in hundreds of different responses. However, there were some interesting responses that pointed to new use cases. Some key use cases are:

- Listening to audio books
- Talking to voice assistants (notice the regional differences for assistants used)
- Online search
- Navigation
- Amplification (when a person's voice is not clear while using the earpiece)
- When on hold (to multi-task while waiting)
- Karaoke

Why choose speaker mode?

Overall, convenience is the most popular reason for using speaker mode across all activities. Others that stand out include multi-tasking (I like to listen/watch while doing something else), which is particularly important for music, podcasts, movies and gaming. Interestingly, "the audio quality is better than my headphones/external speaker" is often cited for many activities.

Key insights:

- **Music and Podcasts:** Globally, respondents reported the use of speaker mode to enable multi-tasking. In China, respondents cited using speaker mode to create a good atmosphere.
- **Movies/TV Content:** In China, speaker mode helps to create a good viewing atmosphere, and convenience is an important factor in Germany and South Korea, whereas preference for speaker mode is habitual in U.K. and U.S.
- **Conference and Video Calls:** There is a small rise in respondents choosing to use speaker mode to listen/watch with others, most notably in China (almost 40%).
- **Gaming:** The use of speaker mode when gaming is justified as more of a habit than anything else. Mobile gaming is increasingly important in China and expected to grow elsewhere. This could lead to more speaker mode usage.
- **Messaging:** Convenience is the key benefit of speaker mode for sending and receiving messages across all countries. "I like to listen/watch while doing something else," also stands out. Perhaps a little surprising, "That is what I've always done," does not come through more in China.
- **Calls:** Use of speaker mode for calls is also driven by convenience, globally. Almost half of respondents in South Korea highlight preference to do other things while talking on the phone.
- **Social Media:** Convenience is still king but there is an uptick in respondents selecting "That's what I've always done" and a preference for multi-tasking while listening.

Sharing content on social media

The global results show that two-thirds of respondents used speaker mode for social media apps.

Key insights:

- The results varied across countries, with China and South Korea showing much higher results (78% and 67% respectively).
- In the U.K. and U.S., approximately 50% said yes, but there were also 16% who said, "Don't know/listen on social media." However, this could be due to an older demographic in these regions, with the 18-34 age group far more likely to share social content via speaker mode in Germany, U.K. and U.S.

Speaker mode use changes

Respondents were also asked to think about how frequently they used speaker mode in particular, and if this has changed in the last 12 months.

Key insights:

- Four in ten respondents said they have increased the use of speaker mode in the last 12 months.
- Those countries with the highest increase in use were China (46%), U.K. (44%) and U.S. (43%).
- Germany is the exception to the rule, perhaps linked to lower use of smartphones for video calls. Again, there was a marked difference across ages, with younger age groups driving increased use of speaker mode.

- South Korea showed the largest decrease at 9% of respondents, but more than half said there was no change.
- Across all countries there were differences highlighted in age groups. In Germany, U.K. and U.S., the 18-34 age group saw the largest increases in use of speaker mode. In China and South Korea, the 35-54 age group saw the largest increase, which seems likely due to the already high usage in the younger demographic in these countries.

Speaker mode scenarios

This open-ended question yielded hundreds of responses. Some key ones include:

- General increase in smartphone use
- Watching more content on a smartphone (rather than a TV, etc.)
- WhatsApp (and other messaging services) voice messages use increasing
- Listening to more audio books
- Using the smartphone for video calls, which has increased
- Hearing difficulties
- Less use of headphones in a home environment
- Longer phone calls—handsfree convenience
- Showing videos to other people

Why not use speaker mode?

When asked why they wouldn't use speaker mode, many cited not wanting to disturb others. Battery life and speaker quality were also seen as important and, in this case, young people care the most.

Satisfaction with current audio

Most respondents are "somewhat satisfied" with the audio quality of their devices, indicating there is a desire for better audio quality across all countries surveyed.

Key insights:

- The dissatisfaction with audio quality is much more pronounced in China than other countries, and this aligns with other questions that suggest people in China are using speaker mode for more activities and, therefore, would have more interest in its audio quality.
- Almost 20% don't seem to care either way and almost a third are very satisfied with audio quality.

Is audio important?

We rounded off the survey with a subjective question about the importance of audio in the purchase-making process.

Key insights:

- When looking at the global picture, the importance of audio is becoming increasingly crucial for almost half of respondents.
- Very few people said that audio is becoming less important (<5% in each country).
- The results among mobile-centric Chinese respondents are much higher, where audio is seen as more important for more than 70% of respondents.
- In South Korea and U.S., more than 40% saw audio as becoming more important.

Conclusions

The survey results show an increasing use of speaker mode across the regions surveyed.

There are a wide range of applications/use cases for this, including watching films/TV, social media content and messaging, video calls and voicemail. One key driver for using speaker mode, across multiple activities, is the convenience and ability for multi-tasking.

The usage of speaker mode is being driven most recently by the forced isolation at home due to the pandemic, but it seems likely that these habits will continue after a return to "normal." Four in 10 respondents said they have increased the use of speaker mode in the last 12 months.

There is strong usage of speaker mode for several applications. Many respondents were "somewhat satisfied" with the current solution, but almost half of respondents also said audio was becoming a more important factor in a smartphone purchase.

This market research carried out by SAR Insight & Consulting on behalf of Cirrus Logic has identified a key opportunity for OEMs to differentiate themselves in an increasingly competitive and crowded marketplace. Arguably, the focus for mobile product development has been on connectivity, processing speed and screen resolution, leaving the audio quality to external devices such as headphones and speakers. This survey has highlighted the spontaneous and social nature of mobile phone use, which requires good quality internal speakers, and was highlighted by respondents as being increasingly important.

It is essential that the industry takes note and strives to improve the audio output and quality in mobile devices. To improve mobile audio and speaker-mode quality, smartphones and other mobile devices require audio amplifiers at the heart of the audio signal chain that can deliver higher output at better quality.

The Audio Speaker Amplifier Market

What is an audio speaker amplifier?

SAR Insight defines an audio speaker amplifier as *a component used to increase the power of an audio signal (i.e., amplify) to enable higher output to a speaker.*

The audio amplifier market has long been an important and sizeable part of the audio signal chain component market (see figure 1).

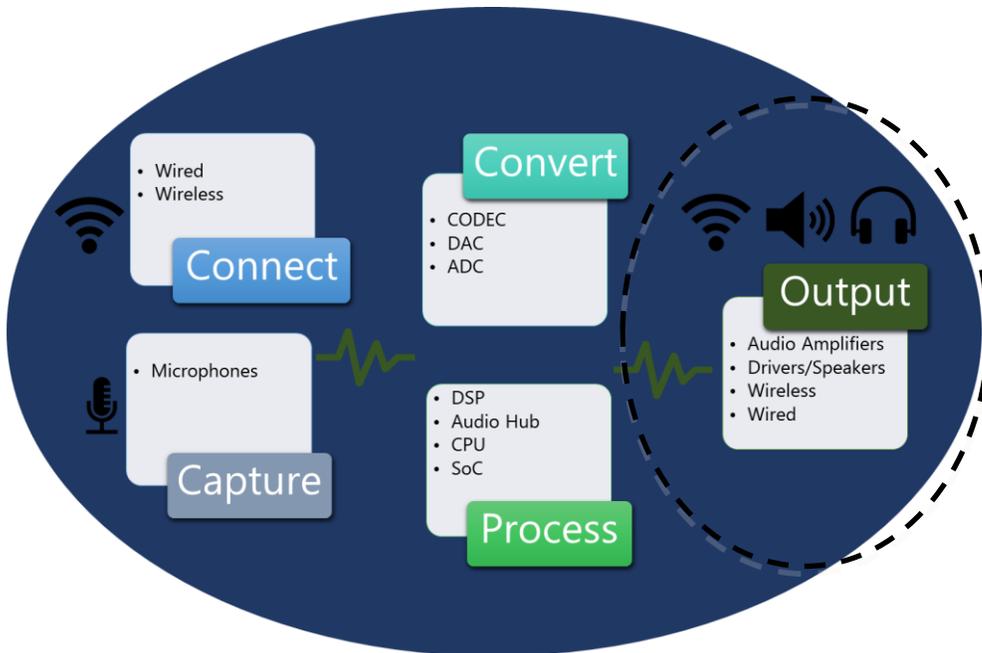


Figure 1. Audio Signal Chain Components, SAR Insight & Consulting.

The audio speaker amplifier market

Audio speaker amplifiers are used in a wide range of devices, from smart watches to cars. More than three billion audio speaker amplifiers are shipped per year, equating to US\$1.5 billion in revenue.

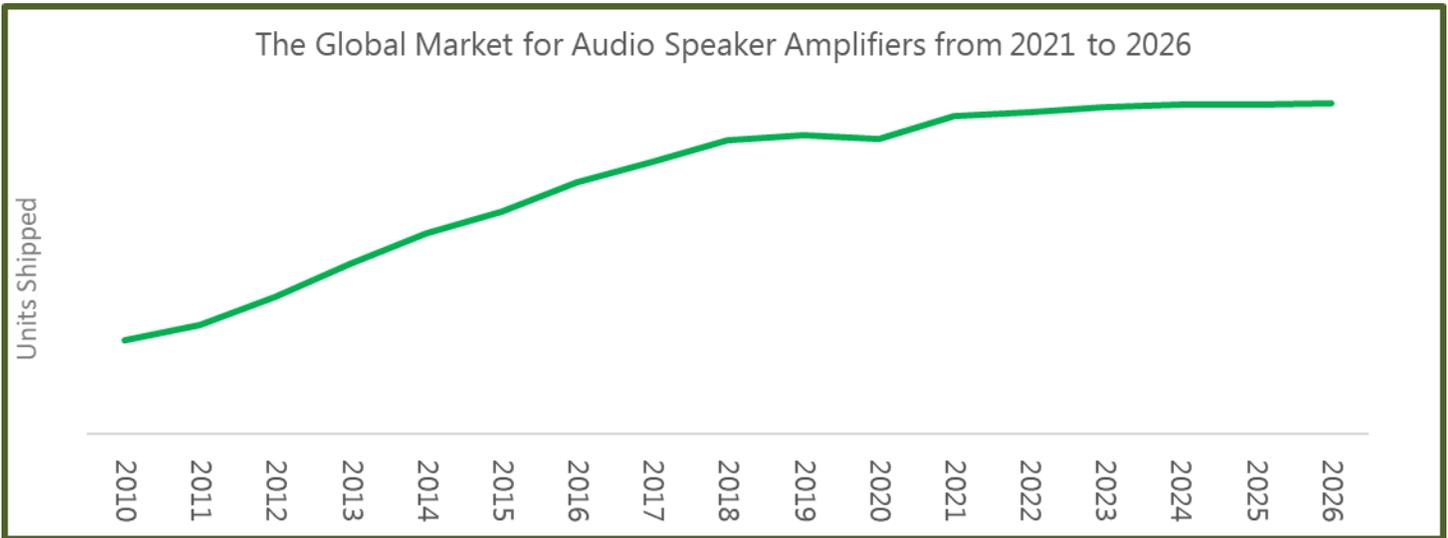


Figure 2. Audio Speaker Amplifier Market, SAR Insight & Consulting.

The smartphone market accounts for approximately 50% of market shipments and revenues. While smartphone shipments have started to decline, there are still strong opportunities for amplifier vendors as the number of speakers per device increases (with most of the market moving to two or more speakers). There is also a desire for higher power output and improved audio quality.

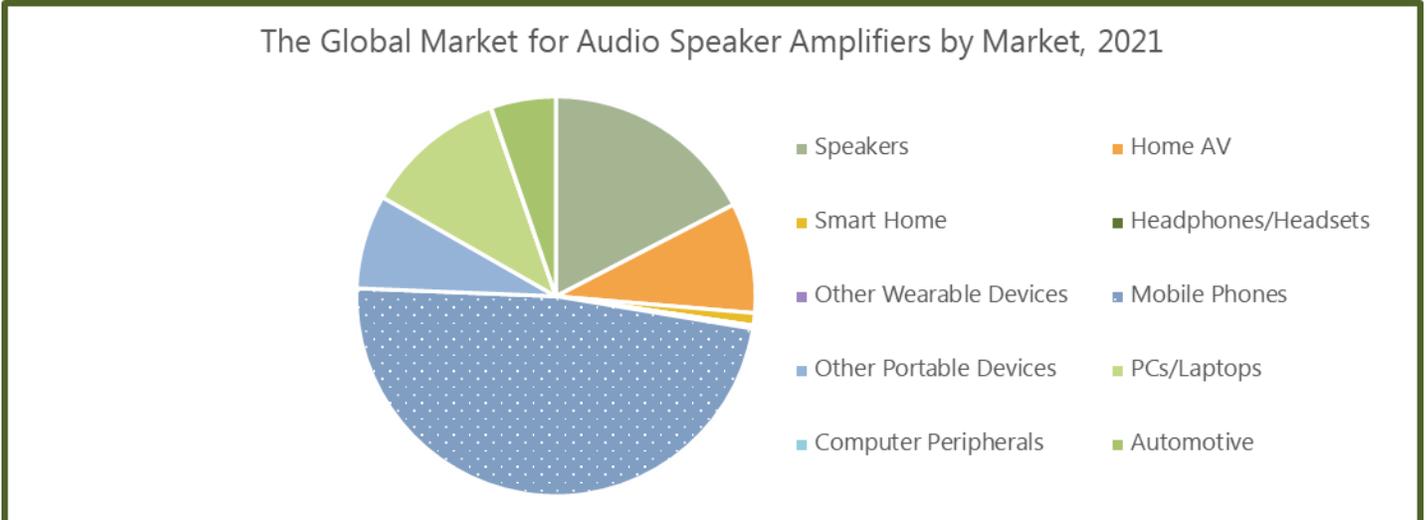


Figure 3. Audio Speaker Amplifier Device Market Share, SAR Insight & Consulting.

Smartphone speaker mode

An audio amplifier chip is used to drive the smartphone speaker(s). This can be for the earpiece and also for additional speakers that are used for "speaker mode."

Speaker mode is the ability to drive audio output at higher volume, which enables the smartphone to operate as a speaker, with an output level capable of being heard clearly at a short distance.

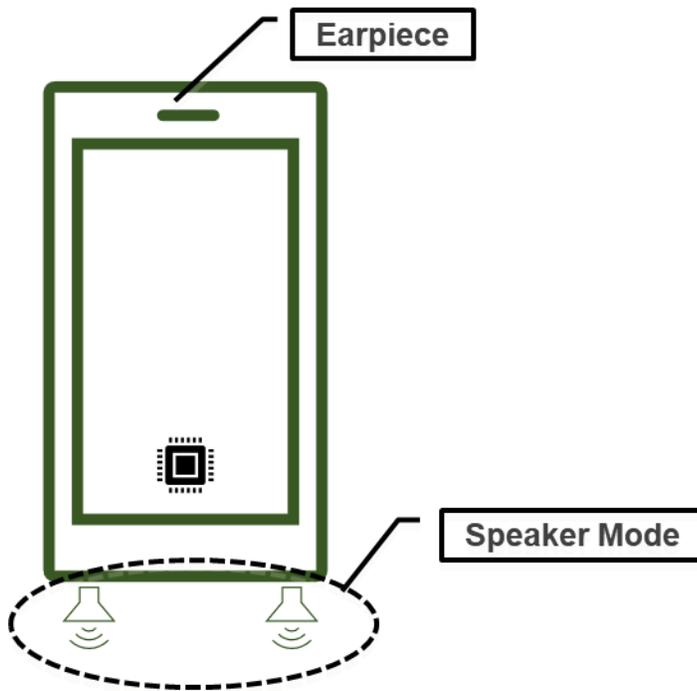


Figure 4. Smartphone Speaker Mode, SAR Insight & Consulting.

Appendix

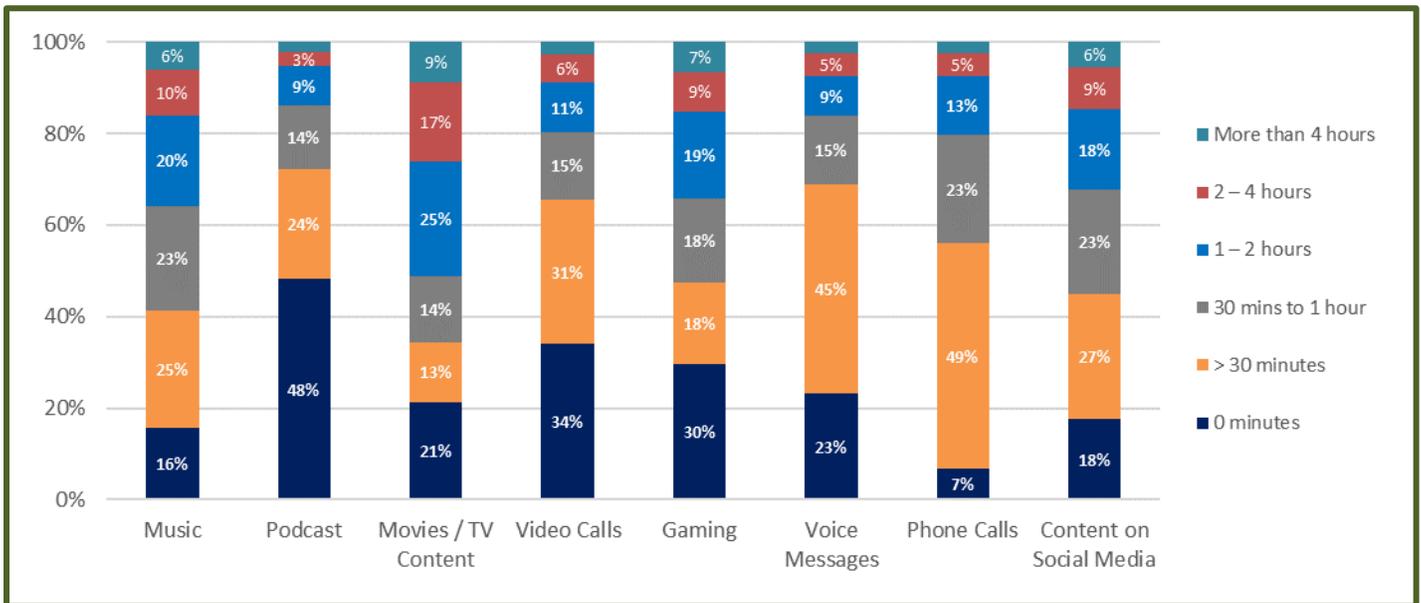
Survey Questions

Question 1

Thinking about a typical day in your life, please tell us how long you spend doing the following activities on your smartphone.

- a) Listening to music
- b) Listening to podcasts
- c) Watching movies/TV content
- d) Video calls/conferences (i.e., FaceTime, Zoom)
- e) Gaming
- f) Sending or receiving voice messages
- g) Phone calls
- h) Sharing/watching content on social media

Q1. Summary Results



Question 2

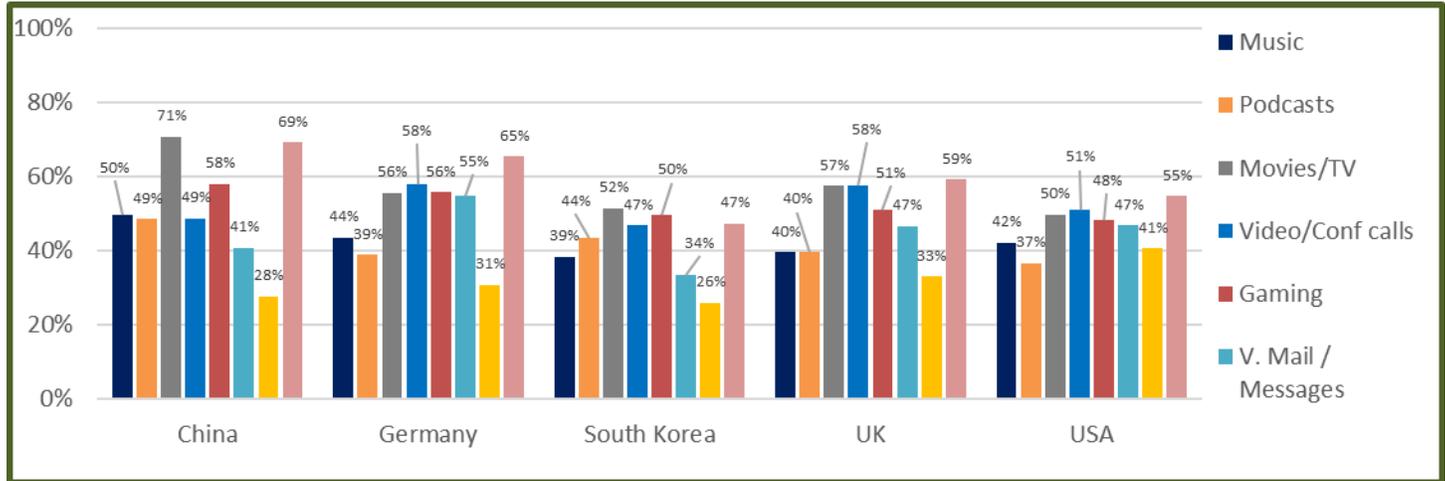
Please tell us how you listen to the following content on your smartphone.

- a) Music
- b) Podcasts
- c) Movies/TV content
- d) Video calls/conferences
- e) Gaming
- f) Voice mail/messages

g) Phone calls

h) Videos on social media

Q2. Summary Results



Question 3

What other situations or apps do you use speaker mode for on your smartphone?

(Open-ended question.)

Q3. Summary Results



During exercise
Listen to audio books
E-learning
Dance practice



Call that many people need to hear
Bixby
Education
I use if / when I can't hear very well
Exercise
Online search



Radio
Alexa
Banking apps
Google Maps
Homework
Listening to audio book
Listening to news
Listening to voicemail



Audio books
On hold
Calling automated services
Camera recordings
Google voice search
GPS
Sing a song



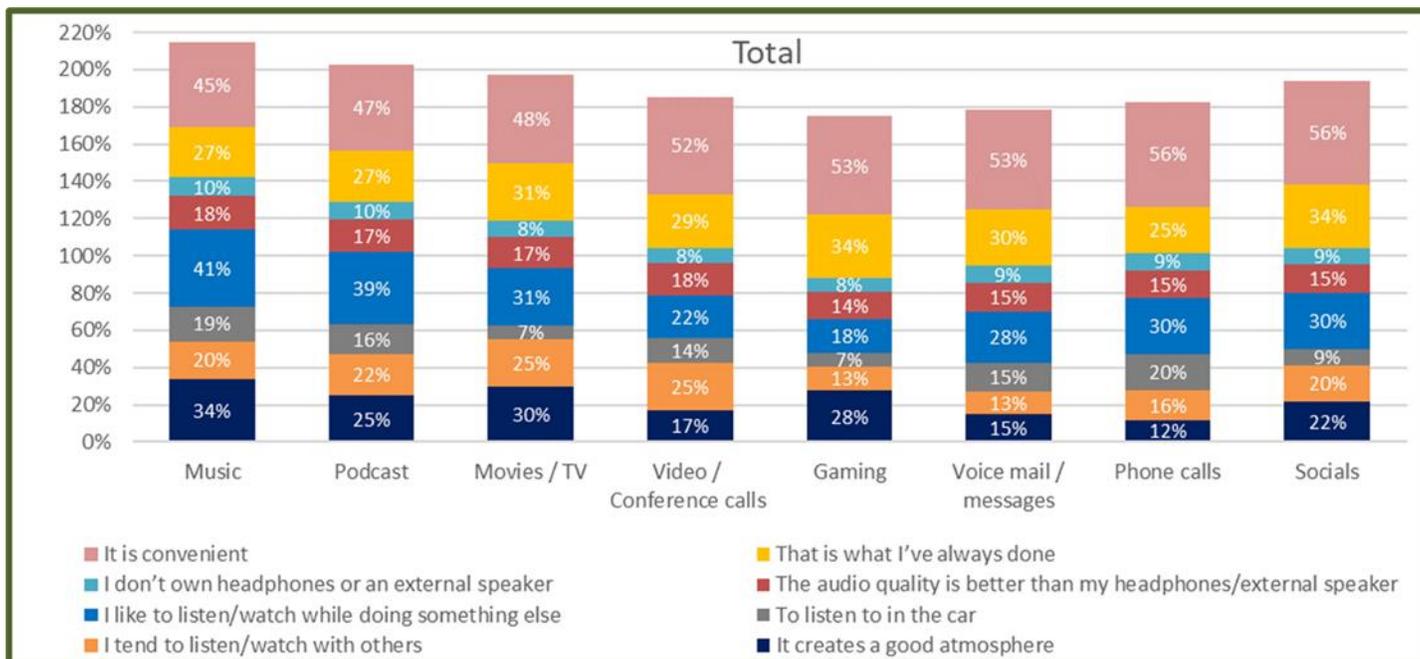
For navigation/GPS
Listening to radio
When headphones aren't handy
Siri
Voice mails
When people talk quietly or not clearly enough

Question 4

Why do you choose to use speaker mode for listening to this content?

- a) It creates a good atmosphere
- b) I tend to listen/watch with others
- c) To listen to in the car
- d) I like to listen/watch while doing something else
- e) The audio quality is better than my headphones/external speaker
- f) I don't own headphones or an external speaker
- g) That is what I've always done
- h) It is convenient
- i) Other (please specify)

Q4. Summary Results

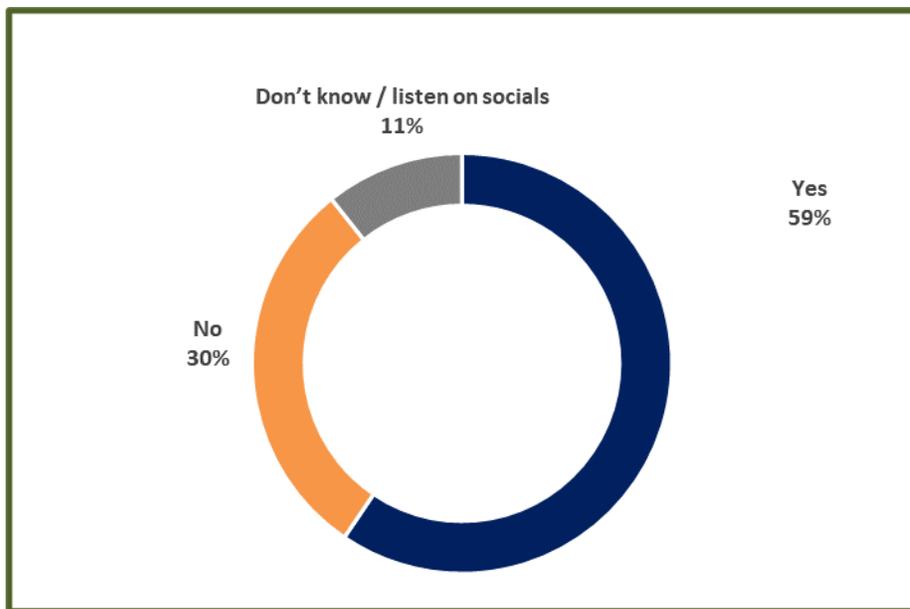


Question 5

Thinking about the audio or video content you listen to or watch on social media apps, have you used speaker mode on your smartphone to share this content with family or friends in the last 12 months?

- a) Yes
- b) No
- c) Don't know / I don't listen to or watch content on social media

Q5. Summary Results

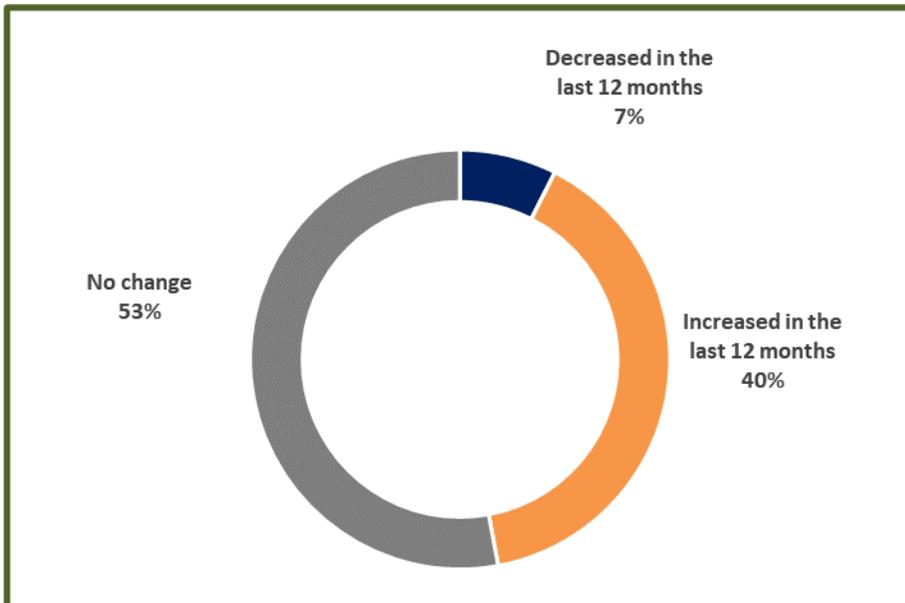


Question 6

Thinking about how frequently you use speaker mode on your smartphone each day, please select the statement which best applies to you.

- a) My use of speaker mode has increased in the last 12 months
- b) The time I spend using speaker mode on my smartphone each day has not changed in the last 12 months
- c) My use of speaker mode has decreased in the last 12 months

Q6. Summary Results



Question 7

Which particular scenarios, or apps, are compelling you to use speaker mode on your phone more than before?

(Open ended)

Q7. Summary Results

"When I'm having trouble hearing and think the speaker may make it clearer."

"Need to make more work calls as I am working from home, speaker frees up my hands and allows me to take notes."

"I usually have music as background noise."

"I am overall on my phone more than ever."

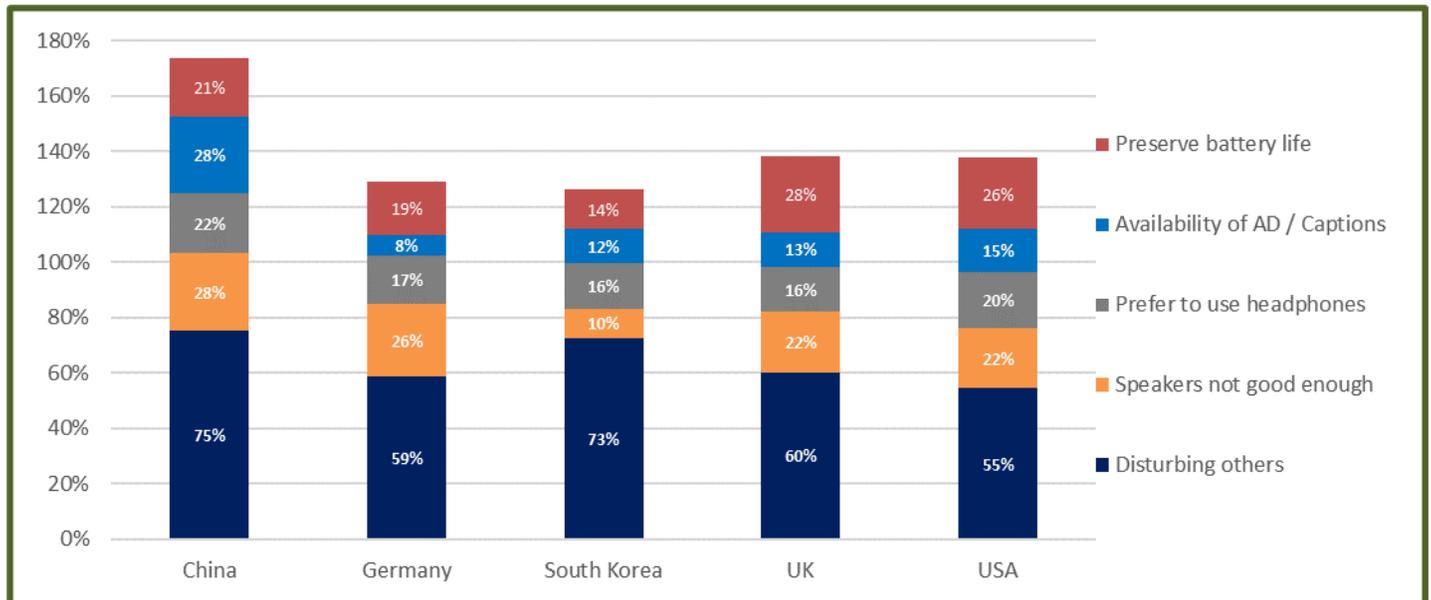
"I have been using my phone more for entertainment because of having to spend more time at home due to Covid-19 restrictions."

Question 8

What would make you choose not to use your phone in speaker mode?

- a) Concerned about disturbing others around me
- b) Quality of speakers in my smartphone not good enough
- c) I prefer to use headphones/external speakers
- d) Availability of audio description/subtitles/captions on the content I watch
- e) Preserve battery life
- f) Other (please specify)

Q8. Summary Results

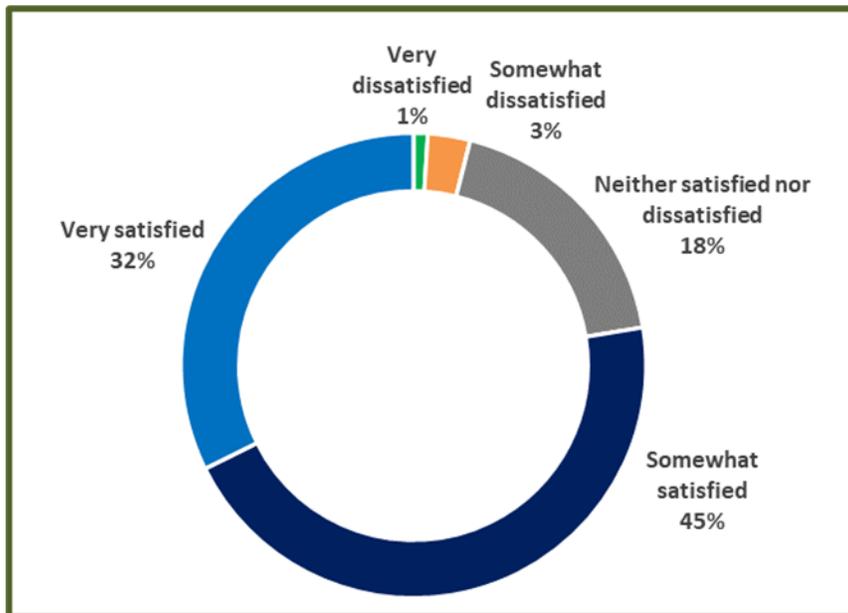


Question 9

Thinking about your current smartphone, how satisfied are you with the audio quality of the built-in speaker(s) or use in speaker mode?

- a) Very satisfied
- b) Somewhat satisfied
- c) Neither satisfied nor dissatisfied
- d) Somewhat dissatisfied
- e) Very dissatisfied

Q9. Summary Results



Question 10

Thinking about the smartphones you have owned, personally, has audio become a more or less important factor in your purchase decision-making process?

- a) More important
- b) No change
- c) Less important

Q10. Summary Results

