

**MARKET RESEARCH**

# THE STATE OF DIGITAL LIFESTYLES – 2019

This report is the latest in Limelight Networks' series of surveys and focuses on the perceptions and online behaviors of global consumers

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# OVERVIEW

The *State of Digital Lifestyles 2019* research report highlights the latest findings in an ongoing series of consumer surveys about online habits and opinions. Consumers in France, Germany, India, Italy, Japan, Singapore, South Korea, the United Kingdom, and the United States age 18 and older who had downloaded software or streamed online video or music during the last month were asked questions about how digital technology has impacted their lives, how they interact with digital media, and the adoption rate of digital assistants and internet-connected devices. Key findings of this report include:

- Technology has had an overwhelmingly positive impact on the lives of global consumers. Nearly 80 percent feel technology has slightly or significantly improved their lives. Less than 5 percent feel it has made their lives worse.
- Consumers are addicted to their mobile phones. Nearly half would be unable to stop using them for even one full day.
- Consumers in India spend more time with digital devices than consumers in other countries, and they are the least willing to give them up. Japanese consumers spend the least amount of time using digital devices and do not consider them to be essential daily tools.
- Music is the most popular type of digital content accessed online. 39 percent of people listen to digital or streaming music daily.
- Most people are willing to pay to access digital movies and TV shows as well as e-books. Nearly half will pay for music and video games.
- Streaming has become mainstream. Consumers prefer to stream movies, TV shows, and music online rather than download or purchase physical media. More than 66 percent stream video and 58 percent stream music online.
- Despite the ease and convenience of watching movies online or on TV, 39 percent of movie lovers still prefer to watch movies in a theater.
- Nearly half of global consumers prefer to shop at physical retail stores rather than online. Retail stores are most popular in Japan with 61 percent preferring to shop at a store, while online shopping is most dominant in India where 67 percent chose the convenience of shopping online.
- Sports fans want to enjoy the big game on broadcast or cable TV, with 59 percent preferring to watch on traditional television rather than stream the game online or attend in person.
- Digital assistants such as Amazon Alexa and Google Home are increasingly used by consumers. The percentage of people owning a digital assistant has grown 47 percent in the last year from 19.2 percent of the population in 2018 to 28.2 percent in 2019.
- Although digital assistants are growing in popularity, they are not considered an integral part of most consumers' lives. Only 16 percent of owners say they would be unable to stop using the devices for a day or more, while 26 percent would be willing to stop using them permanently.
- Only 42 percent of people would definitely trust a digital assistant to provide general information such as news and weather, and just 25 percent have high confidence in using the devices for home automation tasks.
- Online security is a growing concern, with 46 percent of consumers more concerned about their personal information being stolen online than a year ago. Privacy concerns about data collected by digital devices and possible hacking into the devices are also major concerns.
- Consumers have high hopes for 5G wireless networking, with 72 percent expecting faster download speeds.
- More than 86 percent of consumers are frustrated by the process of using digital content. When they have issues downloading and streaming content, the majority blame their Internet Service Provider.

# EXECUTIVE SUMMARY

Digital technology permeates our daily lives, and nowhere has it had a greater impact than how we communicate and access entertainment. Consumers now have instant access to virtually any information, song, movie, book, or TV show from a multitude of devices. Internet-connected digital assistants such as Amazon Echo, Google Home, and Apple HomePod make it easier than ever to manage access to information and entertainment as well automate many tasks. Digital devices have simplified many aspects of our lives, but consumers still have concerns about the use of digital technology.

The majority of consumers believe online digital technology has a positive impact, with nearly 80 percent saying it has improved their lives. More than a third say it has significantly improved their lives, with less than 5 percent feeling it has made their lives worse. Consumers in India feel online digital technology has had the greatest impact on their lives, with 69 percent saying it has brought about significant improvements.

As online digital devices play a larger role in our daily activities, we have become more dependent on them. Nearly half of consumers say they would be unable to stop using their mobile phones for a day or more. One-third would be unwilling to give up their laptop or desktop computer for a day or more. Indian consumers are the most dependent on their digital devices, while consumers in Japan are most willing to give them up.

Most people interact with some form of digital media on a daily basis. Globally, 39 percent listen to digital music and 33 percent download or stream movies and TV shows daily. Streaming has become the most common way to access digital media, with two-thirds choosing to stream movies and TV shows online rather than download or purchase physical copies, and 58 percent streaming music online rather than downloading or purchasing CDs. Consumers are paying for the digital content they consume, with 57 percent willing to pay for movies and TV shows and half willing to pay for digital music. However, only 36 percent will pay to access digital newspapers or magazines.

Although digital content is easily accessible, there are two clear activities consumers often opt to engage in physically. More than 39 percent of global consumers prefer to watch a movie in a theater rather than online or on TV, and half prefer to shop at physical stores rather than online. However, less than 24 percent of sports fans prefer to attend games in person rather than watching on TV or online.

At the same time, we are increasingly turning to digital assistants. In the last year, the number of people owning a digital assistant grew 47 percent to 28 percent of global consumers. However, they are not yet considered an indispensable part of daily life, with only 16 percent of current owners saying they would be unable to stop using them for a day or more and 26 percent willing to stop using them permanently. Consumers continue to have concerns about the devices, with only 42 percent saying they definitely trust them to provide general information such as news and weather and 25 percent having high confidence in their ability to perform home automation tasks.

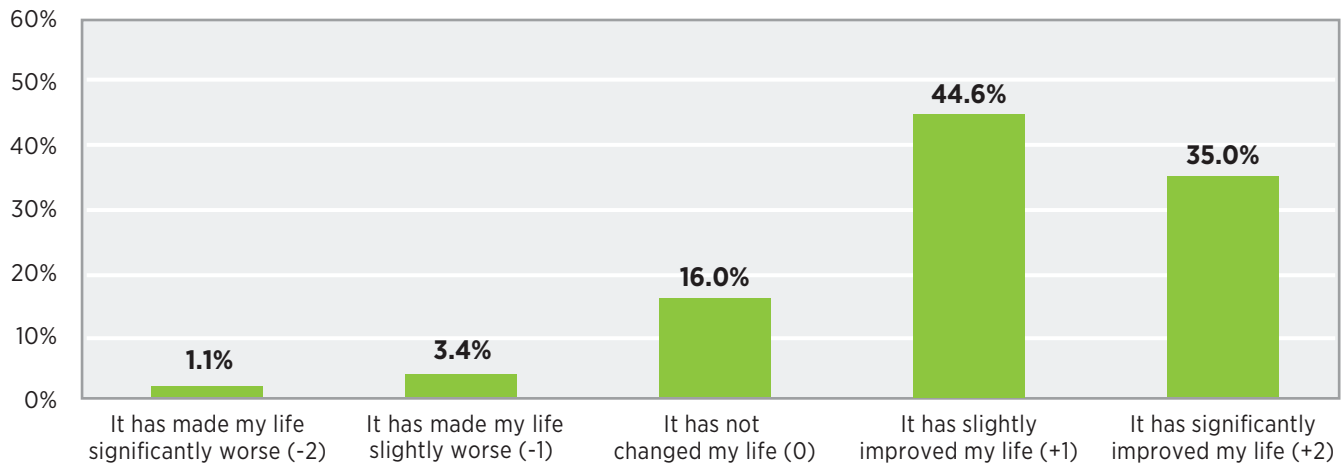
Online security continues to be a major concern, with 46 percent of global consumers more worried about their personal information being stolen than they were just one year ago. Concerns about data security and hacking into digital devices also remain high.

Despite the popularity of digital media in our daily lives, there is room for improvement in the quality of experience currently provided. In fact, more than 86 percent of consumers find digital content frustrating, with 35 percent annoyed by errors that disrupt their experience and 31 percent most frustrated when content stops playing or rebuffers.

# KEY FINDINGS

## DIGITAL TECHNOLOGY HAS GREATLY IMPROVED OUR LIVES

To understand the impact of digital technology, consumers were asked to rate how it has influenced their lives on a scale from -2 to +2. They overwhelmingly feel it has had a positive impact, with 35.0 percent saying it has significantly improved their lives and 44.6 percent feeling it has slightly improved their lives. Only 4.5 percent feel it has made their lives worse.



**Figure 1:** How has the growing influence of online digital technology impacted your life?

Consumers in India feel technology has had the greatest positive impact, with 69.0 percent saying it has brought about a significant improvement in their lives. Italians are the second most optimistic about the impact of technology, closely followed by South Koreans. Japanese consumers are the least optimistic, even though 62.8 percent feel the overall impact has been positive.

Country	It has made my life significantly worse (-2)	It has made my life slightly worse (-1)	It has not changed my life (0)	It has slightly improved my life (+1)	It has significantly improved my life (+2)	Average
France	0.8%	3.0%	17.2%	46.8%	32.2%	1.07
Germany	1.0%	1.4%	23.8%	50.2%	23.6%	0.94
India	0.8%	1.4%	4.2%	24.6%	69.0%	1.60
Italy	0.8%	3.2%	11.6%	40.4%	44.0%	1.24
Japan	1.6%	6.0%	29.6%	50.2%	12.6%	0.66
Singapore	1.6%	3.6%	17.2%	41.2%	36.4%	1.07
South Korea	0.8%	2.4%	8.2%	51.2%	37.4%	1.22
U.K.	1.6%	5.2%	18.2%	49.6%	25.4%	0.92
U.S.	0.6%	4.2%	14.0%	47.0%	34.2%	1.10
All	1.1%	3.4%	16.0%	44.6%	35.0%	1.09

**Figure 2:** How has the growing influence of online digital technology impacted your life?

People over 60 and 18-25 think technology has had less of a positive impact than those 26-60. More people 18-25 feel technology has had a slightly or significantly negative impact on their lives (7.7 percent) than any other age group.

Age	It has made my life significantly worse (-2)	It has made my life slightly worse (-1)	It has not changed my life (0)	It has slightly improved my life (+1)	It has significantly improved my life (+2)	Average
<b>18-25</b>	1.3%	6.4%	14.6%	40.9%	36.9%	<b>1.06</b>
<b>26-35</b>	0.7%	3.6%	15.0%	42.4%	38.2%	<b>1.14</b>
<b>36-45</b>	1.1%	3.8%	13.7%	43.8%	37.6%	<b>1.13</b>
<b>46-60</b>	0.9%	2.3%	16.2%	45.1%	35.6%	<b>1.12</b>
<b>Over 60</b>	1.4%	2.4%	19.6%	48.9%	27.8%	<b>0.99</b>
<b>All</b>	<b>1.1%</b>	<b>3.4%</b>	<b>16.0%</b>	<b>44.6%</b>	<b>35.0%</b>	<b>1.09</b>

**Figure 3:** How has the growing influence of online digital technology impacted your life?

Women are slightly more optimistic about technology than men, with more than 36 percent feeling it has had a significantly positive impact compared to 33.8 percent of men.

Gender	It has made my life significantly worse (-2)	It has made my life slightly worse (-1)	It has not changed my life (0)	It has slightly improved my life (+1)	It has significantly improved my life (+2)	Average
<b>Female</b>	1.1%	3.4%	15.4%	43.9%	36.2%	<b>1.11</b>
<b>Male</b>	1.0%	3.3%	16.6%	45.3%	33.8%	<b>1.07</b>
<b>All</b>	<b>1.1%</b>	<b>3.4%</b>	<b>16.0%</b>	<b>44.6%</b>	<b>35.0%</b>	<b>1.09</b>

**Figure 4:** How has the growing influence of online digital technology impacted your life?

## PEOPLE ARE UNABLE TO STOP USING THEIR MOBILE PHONES FOR EVEN ONE DAY

As digital devices have become more common in our daily lives, we have grown more reliant on them. To understand consumer dependence on various digital devices, respondents were asked how long they would be able to stop using them.

Globally, 47.6 percent of people say they would not be able to stop using their mobile phones for even one day. Dependence on mobile phones is highest in India, with 68.0 percent unwilling to give them up for a day or more. Consumers in the U.K. and U.S. are the most willing to stop using their mobile phones, with only 37.6 percent in the U.K. and 35.7 percent in the U.S. unable to stop using them for a day or more and 13.2 percent in the U.K. and 11.5 percent in the U.S. willing to give up their mobile phones permanently.

Country	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
France	45.9%	27.5%	17.0%	5.7%	4.0%
Germany	41.3%	20.2%	24.0%	6.9%	7.5%
India	68.0%	18.1%	7.0%	2.6%	4.2%
Italy	45.4%	27.3%	15.1%	5.0%	7.2%
Japan	49.8%	32.2%	10.9%	2.1%	5.1%
Singapore	48.7%	24.2%	15.1%	9.2%	2.9%
South Korea	55.7%	26.8%	9.3%	5.4%	2.8%
U.K.	37.6%	22.6%	18.7%	7.9%	13.2%
U.S.	35.7%	28.9%	17.4%	6.6%	11.5%
All	47.6%	25.3%	14.9%	5.7%	6.5%

**Figure 5:** How long would you be able to stop using your mobile phone?

Approximately half of respondents age 18-60 would be unable to stop using their mobile phones for a day or more. However, only 40.7 percent of those over 60 would be unwilling to give them up for a day or more.

Age	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
18-25	48.8%	28.1%	14.6%	4.8%	3.7%
26-35	48.9%	25.9%	13.8%	5.0%	6.5%
36-45	50.9%	23.3%	14.2%	6.1%	5.5%
46-60	48.9%	25.7%	14.1%	4.8%	6.5%
Over 60	40.7%	24.1%	18.0%	7.9%	9.4%
All	47.6%	25.3%	14.9%	5.7%	6.5%

**Figure 6:** How long would you be able to stop using your mobile phone?

Women are more dependent on their mobile phones than men, with half unable to stop for a day or more compared to 45.2 percent of men.

Gender	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
<b>Female</b>	50.0%	25.4%	14.1%	5.1%	5.4%
<b>Male</b>	45.2%	25.2%	15.7%	6.3%	7.6%
<b>All</b>	<b>47.6%</b>	<b>25.3%</b>	<b>14.9%</b>	<b>5.7%</b>	<b>6.5%</b>

**Figure 7:** How long would you be able to stop using your mobile phone?

Just over one-third of respondents would be unable to stop using their desktop or laptop computer for one or more days. Computer dependence is highest in India with 52.7 percent unable to give them up for even one day. Consumers in Japan, the U.K. and the U.S. are most willing to stop using computers.

Country	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
<b>France</b>	37.0%	24.1%	22.9%	11.7%	4.3%
<b>Germany</b>	34.0%	21.0%	25.3%	13.8%	6.0%
<b>India</b>	52.7%	24.1%	15.2%	4.5%	3.5%
<b>Italy</b>	34.4%	24.7%	21.9%	12.5%	6.5%
<b>Japan</b>	30.6%	24.3%	21.3%	8.5%	15.4%
<b>Singapore</b>	32.7%	30.5%	22.3%	10.8%	3.7%
<b>South Korea</b>	31.7%	29.1%	23.9%	9.1%	6.2%
<b>U.K.</b>	28.1%	22.9%	23.9%	14.3%	10.9%
<b>U.S.</b>	27.2%	22.4%	25.3%	14.4%	10.8%
<b>All</b>	<b>34.3%</b>	<b>24.8%</b>	<b>22.4%</b>	<b>11.1%</b>	<b>7.4%</b>

**Figure 8:** How long would you be able to stop using your desktop or laptop computer?

Desktop and laptop dependence is highest among older consumers.

Age	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
<b>18-25</b>	26.6%	20.2%	26.0%	17.2%	10.0%
<b>26-35</b>	28.8%	23.9%	24.3%	14.3%	8.8%
<b>36-45</b>	32.5%	25.9%	21.9%	11.3%	8.4%
<b>46-60</b>	36.3%	27.2%	21.0%	9.1%	6.3%
<b>Over 60</b>	43.1%	24.2%	20.9%	6.7%	5.2%
<b>All</b>	<b>34.3%</b>	<b>24.8%</b>	<b>22.4%</b>	<b>11.1%</b>	<b>7.4%</b>

**Figure 9:** How long would you be able to stop using your desktop or laptop computer?

With the growing availability of larger-size mobile phones, consumers are becoming less dependent on tablets. Just over 20 percent of tablet owners would be unable to stop using them for a day or more, with more than 18 percent willing to give them up permanently.

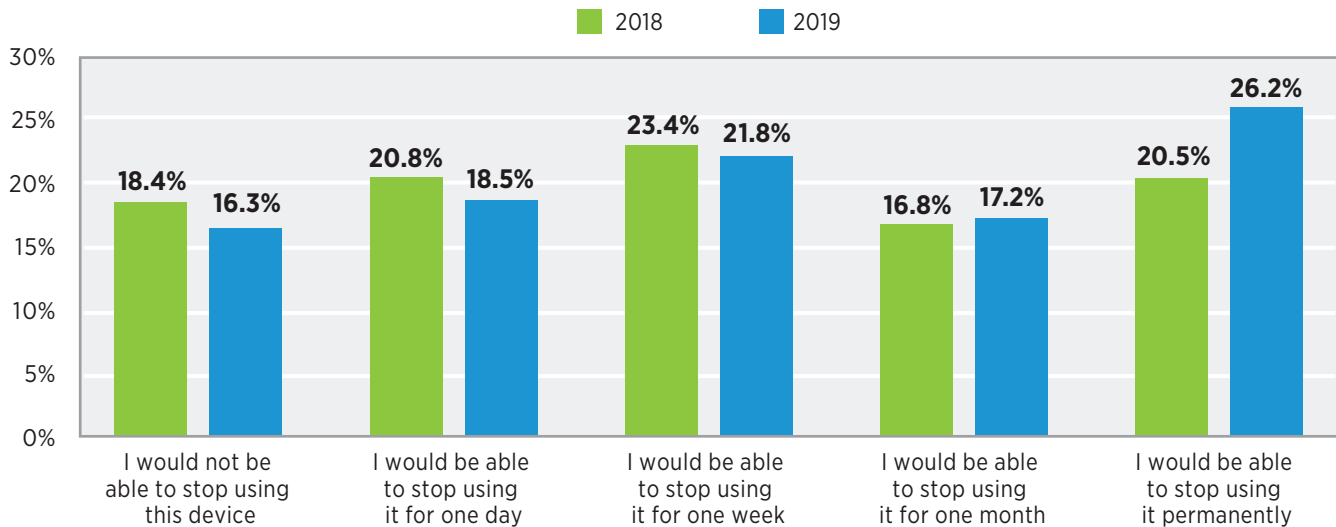
Country	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
<b>France</b>	15.9%	23.3%	23.1%	17.2%	20.5%
<b>Germany</b>	17.8%	18.4%	25.7%	19.5%	18.7%
<b>India</b>	38.1%	26.7%	20.8%	6.9%	7.5%
<b>Italy</b>	22.8%	18.1%	25.7%	15.2%	18.1%
<b>Japan</b>	13.9%	19.3%	21.8%	12.7%	32.3%
<b>Singapore</b>	21.2%	21.5%	32.6%	15.3%	9.4%
<b>South Korea</b>	16.6%	25.5%	26.6%	16.1%	15.3%
<b>U.K.</b>	21.3%	17.4%	28.6%	15.0%	17.7%
<b>U.S.</b>	15.1%	17.8%	22.5%	17.0%	27.7%
<b>All</b>	<b>20.3%</b>	<b>20.9%</b>	<b>25.4%</b>	<b>15.1%</b>	<b>18.3%</b>

**Figure 10:** How long would you be able to stop using your tablet?

Although digital assistants such as Amazon Alexa and Google Home can be used for a variety of tasks, they are not considered indispensable by most users. Only 16.3 percent digital assistant owners would be unable to give them up for a day or more. By contrast, more than a quarter (26.2 percent) would be willing to stop using them permanently, an increase of more than five percent year over year.

Country	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
<b>France</b>	13.4%	16.3%	27.6%	22.6%	20.1%
<b>Germany</b>	12.3%	13.1%	22.7%	17.3%	34.6%
<b>India</b>	38.0%	26.9%	15.3%	10.8%	9.1%
<b>Italy</b>	14.7%	16.8%	30.5%	14.7%	23.2%
<b>Japan</b>	8.3%	13.9%	14.4%	12.2%	51.1%
<b>Singapore</b>	13.3%	24.2%	25.5%	22.1%	14.9%
<b>South Korea</b>	10.9%	22.4%	24.8%	17.4%	24.5%
<b>U.K.</b>	13.5%	12.1%	18.4%	19.9%	36.2%
<b>U.S.</b>	14.5%	15.2%	14.1%	16.4%	39.8%
<b>All</b>	<b>16.3%</b>	<b>18.5%</b>	<b>21.8%</b>	<b>17.2%</b>	<b>26.2%</b>

**Figure 11:** How long would you be able to stop using your digital assistant such as Amazon Alexa or Google Home?



**Figure 12:** How long would you be able to stop using your digital assistant such as Amazon Alexa or Google Home?

Digital assistants are relied upon by younger consumers more than older ones.

Age	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
<b>18-25</b>	19.8%	15.6%	18.3%	14.8%	31.6%
<b>26-35</b>	17.0%	21.0%	18.1%	17.4%	26.5%
<b>36-45</b>	17.5%	18.3%	24.8%	17.0%	22.5%
<b>46-60</b>	15.4%	18.1%	21.9%	17.8%	26.8%
<b>Over 60</b>	12.6%	18.7%	25.4%	18.0%	25.4%
<b>All</b>	<b>16.3%</b>	<b>18.5%</b>	<b>21.8%</b>	<b>17.2%</b>	<b>26.2%</b>

**Figure 13:** How long would you be able to stop using your digital assistant such as Amazon Alexa or Google Home?

Wearable devices such as health and fitness trackers have been available for many years, but they are not considered essential by most wearers. 28.5 percent of users would be willing to stop using them permanently with an additional 14.0 percent willing to give them up for a month. Only 17.7 percent of wearers would be unable to give them up for a day or more.

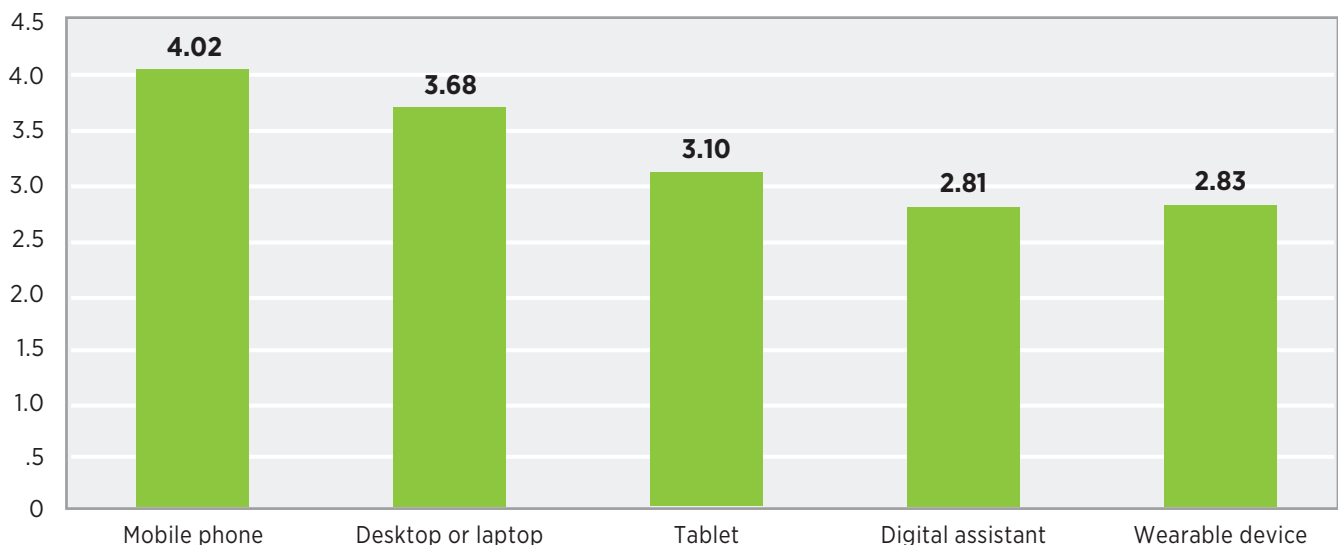
Country	I would not be able to stop using this device	I would be able to stop using it for one day	I would be able to stop using it for one week	I would be able to stop using it for one month	I would be able to stop using it permanently
France	14.3%	18.2%	25.4%	15.6%	26.4%
Germany	12.7%	15.0%	20.8%	16.2%	35.4%
India	34.8%	26.5%	19.8%	8.6%	10.3%
Italy	17.7%	15.7%	26.3%	14.3%	26.0%
Japan	7.1%	13.1%	15.5%	10.7%	53.6%
Singapore	15.6%	21.7%	22.2%	16.9%	23.5%
South Korea	14.2%	19.4%	24.0%	17.9%	24.6%
U.K.	17.3%	13.2%	20.3%	15.8%	33.5%
U.S.	18.4%	16.5%	14.3%	8.8%	41.9%
All	17.7%	18.4%	21.4%	14.0%	28.5%

**Figure 14:** How long would you be able to stop using your wearable device such as a health and fitness tracker or smart watch?

To compare consumer opinions about their willingness to stop using each internet-connected device, we applied a weighted scale from 1-5. Higher scores indicate users are more dependent on the device and unwilling to stop using it.

- 5 = I would not be able to stop using this device**
- 4 = I would be able to stop using it for one day**
- 3 = I would be able to stop using it for one week**
- 2 = I would be able to stop using it for one month**
- 1 = I would be able to stop using it permanently**

Global consumers are more dependent on their mobile phones than any of their other internet-connected digital devices. Desktop and laptop computers came in second, followed by tablets, wearable devices, and digital assistants.



**Figure 15:** How difficult would it be to stop using the following devices? (Scale 1-5)

Consumers in India are the most addicted to their digital devices, far surpassing any other country. Japanese consumers are the most willing to give them up, followed by Americans.

Country	Mobile phone	Desktop or laptop	Tablet	Digital assistant	Wearable device	Average
France	4.05	3.78	2.97	2.80	2.79	3.28
Germany	3.81	3.63	2.97	2.51	2.53	3.09
India	4.43	4.18	3.81	3.74	3.67	3.97
Italy	3.99	3.68	3.12	2.85	2.85	3.30
Japan	4.19	3.46	2.70	2.16	2.10	2.92
Singapore	4.07	3.78	3.30	2.99	2.89	3.41
South Korea	4.27	3.71	3.12	2.78	2.81	3.34
U.K.	3.63	3.43	3.10	2.47	2.65	3.06
U.S.	3.71	3.41	2.76	2.48	2.61	2.99
All	4.02	3.68	3.10	2.81	2.83	3.29

**Figure 16:** How difficult would it be to stop using the following devices? (Scale 1-5)

People age 18-60 are addicted to their phones more than any other digital device. However, those over 60 are most reliant on their desktop and laptop computers and rely on them more than any other age group.

Age	Mobile phone	Desktop or laptop	Tablet	Digital assistant	Wearable device	Average
18-25	4.13	3.36	2.89	2.77	2.75	3.18
26-35	4.06	3.50	2.98	2.85	2.92	3.26
36-45	4.08	3.63	3.13	2.91	2.93	3.34
46-60	4.06	3.78	3.13	2.78	2.77	3.30
Over 60	3.79	3.93	3.28	2.75	2.75	3.30
All	4.02	3.68	3.10	2.81	2.83	3.29

**Figure 17:** How difficult would it be to stop using the following devices? (Scale 1-5)

Women are less willing to stop using their mobile phones than men, while men rely on computers more than women.

Gender	Mobile phone	Desktop or laptop	Tablet	Digital assistant	Wearable device	Average
Female	4.10	3.59	3.10	2.81	2.84	3.29
Male	3.94	3.75	3.10	2.82	2.82	3.29
All	4.02	3.68	3.10	2.81	2.83	3.29

**Figure 18:** How difficult would it be to stop using the following devices? (Scale 1-5)

## MUSIC IS THE MOST POPULAR ONLINE DIGITAL CONTENT

Global consumers were asked to indicate how often they download, stream, or access digital content on a scale from 0-4 where:

**0 = Never**

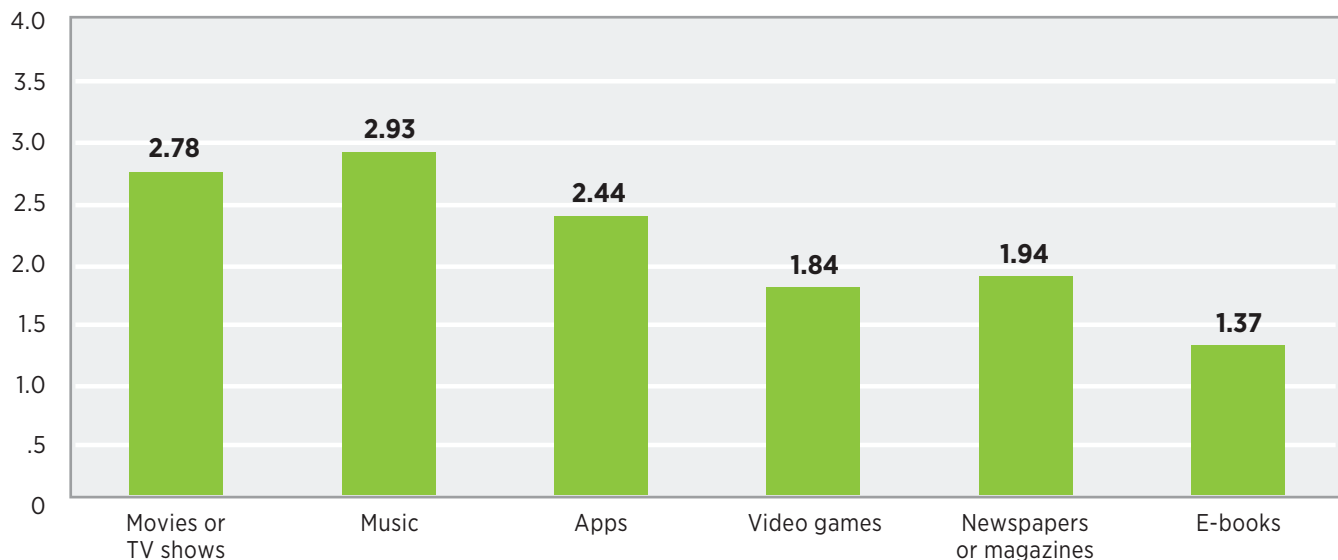
**1 = Two to three times per year**

**2 = Monthly**

**3 = Weekly**

**4 = Daily**

Music is the most-accessed digital content. Movies and TV shows were a close second, followed by apps, newspapers and magazines, video games, and e-books.



**Figure 19:** How often do you download, stream, or access the following types of digital content online? (Scale 0-4)

Music is the most popular type of online digital content in every country except Singapore, where movies and TV shows are accessed most often. Indians have a higher overall level of engagement with digital content than consumers in any other country.

Country	Movies or TV shows	Music	Apps	Video games	Newspapers or magazines	E-books	Average
France	2.48	2.71	2.18	1.73	1.62	1.00	1.95
Germany	2.87	2.94	2.23	1.65	1.68	1.09	2.08
India	3.04	3.29	2.94	2.25	3.01	2.12	2.78
Italy	2.90	3.05	2.70	1.96	2.24	1.52	2.40
Japan	2.43	2.53	2.30	1.53	1.40	1.03	1.87
Singapore	2.78	2.75	2.42	2.05	2.11	1.59	2.28
South Korea	2.70	3.10	2.55	2.05	2.04	1.37	2.30
U.K.	2.80	2.97	2.34	1.64	1.85	1.30	2.15
U.S.	2.98	3.01	2.32	1.74	1.48	1.32	2.14
All	2.78	2.93	2.44	1.84	1.94	1.37	2.22

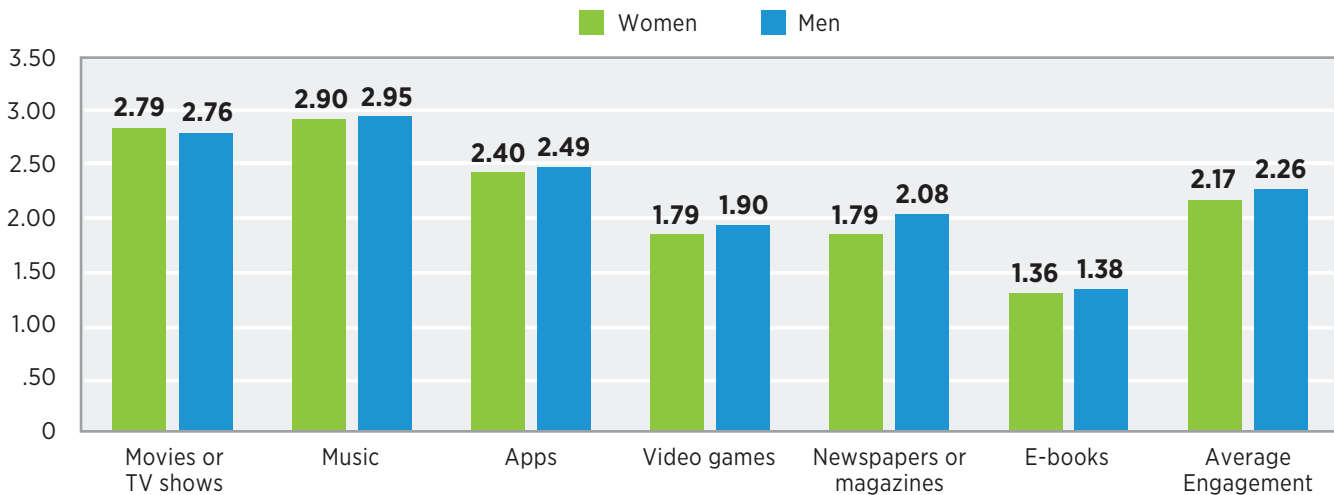
**Figure 20:** How often do you download, stream, or access the following types of digital content online? (Scale 0-4)

Music is the most popular content with every age group. Consumers 26-35 have the highest average engagement with digital content, while those over 65 have the lowest. Video games are most popular with 18-25 year olds.

Age	Movies or TV shows	Music	Apps	Video games	Newspapers or magazines	E-books	Average
<b>18-25</b>	3.10	3.44	2.67	2.51	1.56	1.44	<b>2.45</b>
<b>26-35</b>	3.24	3.33	2.77	2.49	2.09	1.77	<b>2.62</b>
<b>36-45</b>	3.00	3.08	2.59	2.08	2.11	1.58	<b>2.41</b>
<b>46-60</b>	2.59	2.70	2.32	1.53	1.91	1.18	<b>2.04</b>
<b>Over 60</b>	2.21	2.42	2.05	1.08	1.95	1.07	<b>1.80</b>
<b>All</b>	<b>2.78</b>	<b>2.93</b>	<b>2.44</b>	<b>1.84</b>	<b>1.94</b>	<b>1.37</b>	<b>2.22</b>

**Figure 21:** How often do you download, stream, or access the following types of digital content online? (Scale 0-4)

Overall, men spend more time with digital content than women. However, women watch movies and TV shows more often.



**Figure 22:** How often do you download, stream, or access the following types of digital content online? (Scale 0-4)

More than half of Indian consumers access digital music daily, with less than 2 percent never listening. Japan and France have the lowest number of people who listen to digital music daily.

Country	Daily	Weekly	Monthly	2 to 3 times per year	Never
<b>France</b>	30.4%	32.4%	21.6%	8.6%	7.0%
<b>Germany</b>	39.2%	33.4%	14.4%	8.4%	4.6%
<b>India</b>	52.2%	31.6%	10.6%	4.2%	1.4%
<b>Italy</b>	40.2%	37.8%	12.4%	5.8%	3.8%
<b>Japan</b>	29.2%	27.8%	19.0%	14.6%	9.4%
<b>Singapore</b>	32.0%	32.6%	19.6%	10.4%	5.4%
<b>South Korea</b>	44.2%	30.0%	18.8%	6.0%	1.0%
<b>U.K.</b>	41.6%	33.0%	13.0%	5.4%	7.0%
<b>U.S.</b>	41.8%	35.0%	10.2%	8.0%	5.0%
<b>All</b>	<b>39.0%</b>	<b>32.6%</b>	<b>15.5%</b>	<b>7.9%</b>	<b>5.0%</b>

**Figure 23:** How often do you download or stream music?

Younger consumers listen to digital music more often than older ones, with daily listening decreasing with age. More than 10 percent of those over 60 never listen to digital music.

Age	Daily	Weekly	Monthly	2 to 3 times per year	Never
<b>18-25</b>	63.4%	23.1%	8.9%	3.0%	1.6%
<b>26-35</b>	57.0%	26.5%	11.0%	3.5%	2.1%
<b>36-45</b>	42.6%	34.1%	14.8%	6.0%	2.5%
<b>46-60</b>	26.9%	38.3%	18.5%	10.1%	6.2%
<b>Over 60</b>	20.6%	35.1%	20.3%	13.8%	10.2%
<b>All</b>	<b>39.0%</b>	<b>32.6%</b>	<b>15.5%</b>	<b>7.9%</b>	<b>5.0%</b>

**Figure 24:** How often do you download or stream music?

41.8 percent of Americans download and stream movies and TV shows daily, more than viewers in any other country and just narrowly edging Indians. France has the lowest number who watch daily, while Japan has the highest number who never download or stream movies and TV shows.

Country	Daily	Weekly	Monthly	2 to 3 times per year	Never
<b>France</b>	21.2%	36.6%	22.0%	9.8%	10.4%
<b>Germany</b>	35.2%	37.0%	14.0%	7.4%	6.4%
<b>India</b>	41.4%	33.2%	15.8%	7.4%	2.2%
<b>Italy</b>	36.2%	34.2%	17.4%	7.4%	4.8%
<b>Japan</b>	32.2%	23.0%	17.0%	10.8%	17.0%
<b>Singapore</b>	26.8%	38.4%	23.8%	8.2%	2.8%
<b>South Korea</b>	27.2%	35.0%	20.4%	15.0%	2.4%
<b>U.K.</b>	33.4%	36.2%	15.8%	6.4%	8.2%
<b>U.S.</b>	41.8%	34.4%	10.6%	6.0%	7.2%
<b>All</b>	<b>32.8%</b>	<b>34.3%</b>	<b>17.4%</b>	<b>8.7%</b>	<b>6.8%</b>

**Figure 25:** How often do you download or stream movies or TV shows?

Consumers 26-35 download and stream movies and TV shows more than any other age group, with more than half watching daily and 81.7 percent watching at least once a week.

Age	Daily	Weekly	Monthly	2 to 3 times per year	Never
<b>18-25</b>	46.7%	29.9%	14.2%	5.1%	4.1%
<b>26-35</b>	51.4%	30.3%	11.3%	4.4%	2.5%
<b>36-45</b>	41.0%	32.4%	16.8%	5.8%	4.1%
<b>46-60</b>	22.1%	39.7%	20.5%	10.4%	7.3%
<b>Over 60</b>	15.2%	34.3%	21.2%	15.0%	14.3%
<b>All</b>	<b>32.8%</b>	<b>34.3%</b>	<b>17.4%</b>	<b>8.7%</b>	<b>6.8%</b>

**Figure 26:** How often do you download or stream movies or TV shows?

## CONSUMERS WILL PAY FOR DIGITAL MOVIES, TV SHOWS, AND BOOKS

Globally, consumers are more willing to pay for movies and TV shows than any other type of digital content. 57 percent will pay to watch movies and TV shows, followed by e-books (53.2 percent). Nearly half will pay to listen to digital music, but only 40.7 percent will pay for apps and 35.5 percent will pay to access online newspapers and magazines.

Country	Movies or TV shows	Music	Video Games	E-Books	Newspapers or magazines	Apps
<b>France</b>	53.2%	50.8%	53.1%	50.0%	40.4%	43.4%
<b>Germany</b>	64.2%	53.0%	50.3%	60.3%	38.5%	39.3%
<b>India</b>	49.6%	44.2%	41.1%	51.8%	35.0%	38.2%
<b>Italy</b>	60.8%	47.7%	50.9%	56.0%	42.9%	44.2%
<b>Japan</b>	48.3%	44.0%	46.3%	48.9%	35.4%	43.9%
<b>Singapore</b>	51.5%	38.8%	44.4%	42.6%	30.5%	39.3%
<b>South Korea</b>	58.7%	64.5%	51.8%	55.6%	30.1%	40.4%
<b>U.K.</b>	62.7%	58.2%	56.2%	59.2%	33.0%	40.0%
<b>U.S.</b>	63.9%	47.5%	48.4%	56.2%	32.9%	38.0%
<b>All</b>	<b>57.0%</b>	<b>49.9%</b>	<b>49.0%</b>	<b>53.2%</b>	<b>35.5%</b>	<b>40.7%</b>

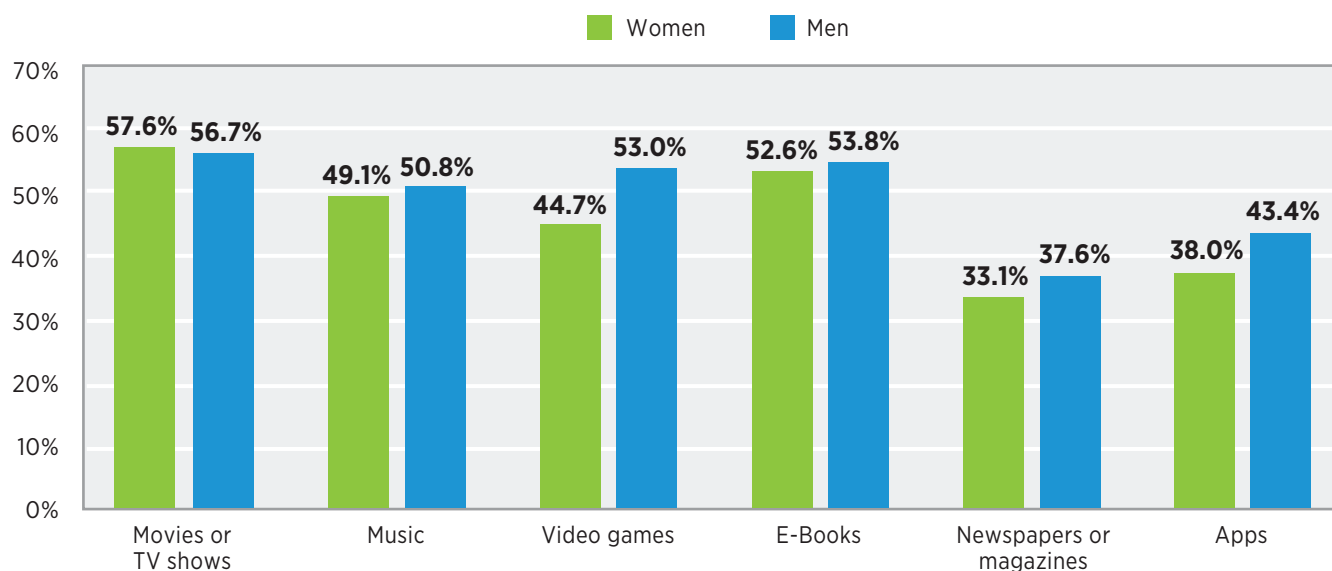
**Figure 27:** Are you willing to pay for content you download, stream, or access online?

Younger consumers are more willing to pay for digital content than older ones. People 18-25 are more likely to pay to access movies and TV shows, video games, and newspapers and magazines than any other age group. Those 26-35 are most willing to pay for music, e-books, and apps.

Age	Movies or TV shows	Music	Video Games	E-Books	Newspapers or magazines	Apps
<b>18-25</b>	65.5%	54.3%	63.0%	50.0%	39.8%	43.5%
<b>26-35</b>	63.4%	56.4%	56.2%	59.4%	39.6%	45.6%
<b>36-45</b>	58.8%	54.4%	52.4%	56.0%	37.2%	43.7%
<b>46-60</b>	54.7%	48.7%	41.6%	50.2%	32.3%	36.0%
<b>Over 60</b>	46.6%	38.1%	34.4%	50.8%	32.3%	38.3%
<b>All</b>	<b>57.0%</b>	<b>49.9%</b>	<b>49.0%</b>	<b>53.2%</b>	<b>35.5%</b>	<b>40.7%</b>

**Figure 28:** Are you willing to pay for content you download, stream, or access online?

Overall, men are more willing to pay for content than women, however women are more likely to pay for movies and TV shows than men.



**Figure 29:** Are you willing to pay for content you download, stream, or access online?

## STREAMING LEADS THE WAY WHEN ACCESSING DIGITAL MEDIA

Streaming is clearly the preferred option for watching digital movies and TV shows. Nearly two-thirds of consumers prefer to stream movies and TV shows online rather than download them or rent or purchase DVDs. Streaming is highest in Germany at 84.2 percent and lowest in South Korea at 51.9 percent. The highest popularity for downloading is in South Korea at 44.8 percent, while DVDs are rented and purchased in Japan (20.9 percent) more than anywhere else.

Country	Download to watch offline	Rent or purchase DVD	Stream online
France	23.7%	11.8%	64.5%
Germany	10.2%	5.6%	84.2%
India	38.0%	2.9%	59.1%
Italy	21.2%	7.3%	71.5%
Japan	26.2%	20.9%	52.9%
Singapore	33.8%	6.6%	59.6%
South Korea	44.8%	3.3%	51.9%
U.K.	20.4%	7.0%	72.7%
U.S.	12.2%	6.4%	81.4%
All	25.8%	7.7%	66.5%

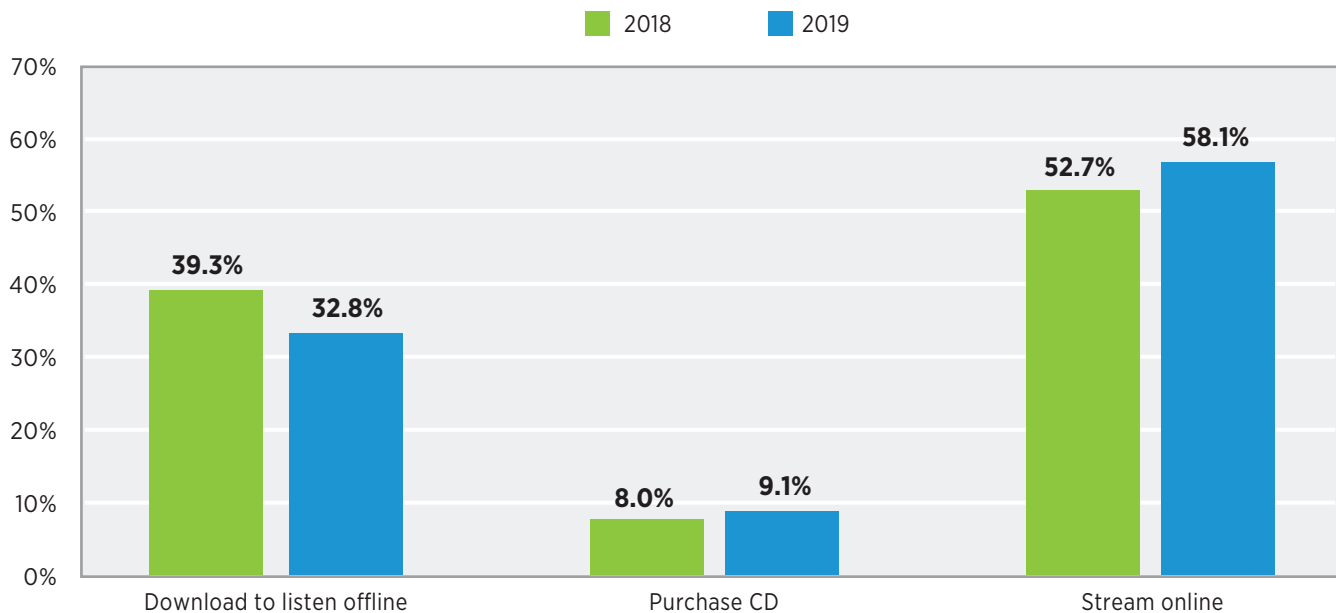
**Figure 30:** How do you typically obtain movies or TV shows?

Consumers 18-25 stream movies and TV shows more than any other age group, while those 46-60 are most likely to download and watch offline.

Age	Download to watch offline	Rent or purchase DVD	Stream online
18-25	22.1%	7.7%	70.2%
26-35	24.9%	7.7%	67.4%
36-45	23.7%	7.1%	69.2%
46-60	28.2%	7.5%	64.3%
Over 60	27.9%	8.7%	63.4%
All	25.8%	7.7%	66.5%

**Figure 31:** How do you typically obtain movies or TV shows?

58.1 percent of global consumers prefer to stream music online rather than download it or purchase a CD. This represents an increase of more than five percent in the last year.



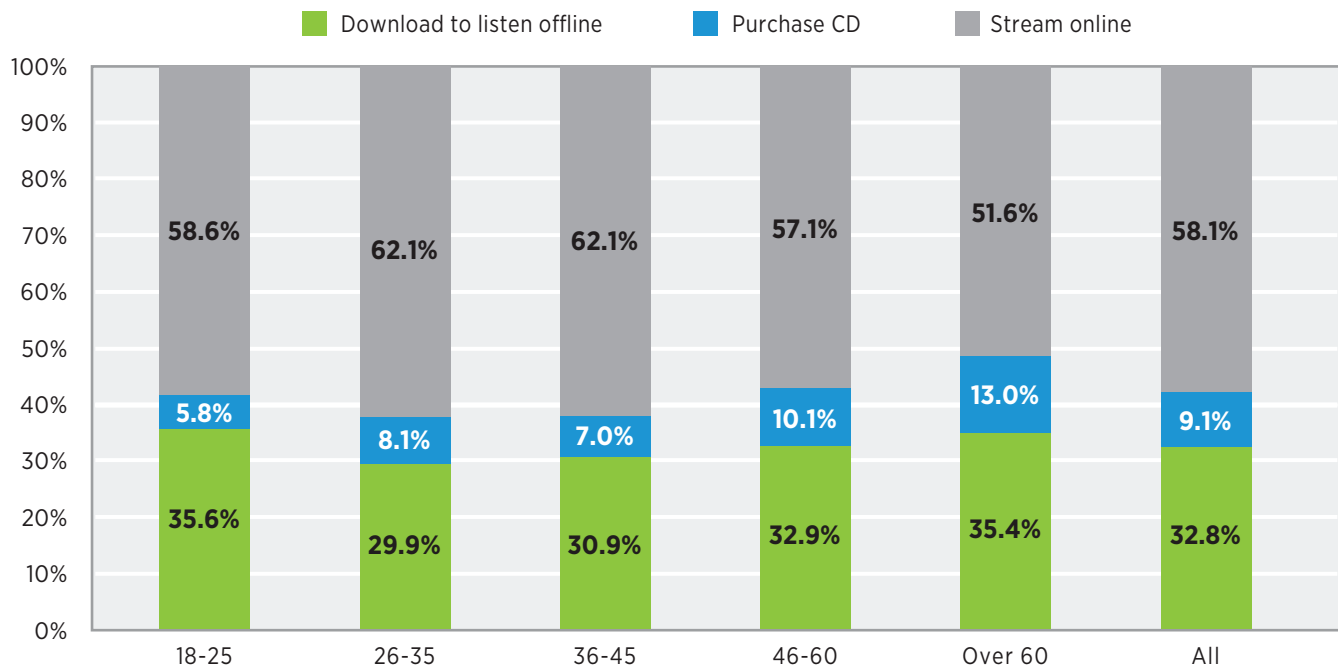
**Figure 32:** How do you typically obtain music?

Online music streaming is highest in the U.S. at 67.2 percent and lowest in Japan at 41.4 percent. Offline listening is highest in Singapore at 45.3 percent, while CDs continue to be purchased by 18.3 percent of Japanese music lovers.

Country	Download to listen offline	Purchase CD	Stream online
France	29.6%	12.1%	58.4%
Germany	23.1%	11.5%	65.4%
India	43.1%	3.9%	53.0%
Italy	28.0%	7.9%	64.1%
Japan	40.3%	18.3%	41.4%
Singapore	45.3%	7.9%	46.8%
South Korea	33.1%	3.2%	63.7%
U.K.	28.2%	10.4%	61.4%
U.S.	25.3%	7.6%	67.2%
All	32.8%	9.1%	58.1%

**Figure 33:** How do you typically obtain music?

People 18-25 are most likely to download music for offline listening than other age groups, while those 26-45 stream music online most often.



**Figure 34:** How do you typically obtain music?

Video games are downloaded more often than they are played online, with Japan having the highest download rate at 58.3 percent. Online gaming is the highest in South Korea at 45.7 percent. Renting and purchasing gaming DVDs is highest in the U.K. at 21.6 percent.

Country	Download video game	Play video games online	Rent or purchase a DVD
France	47.4%	34.6%	18.0%
Germany	41.6%	38.1%	20.4%
India	51.4%	43.4%	5.2%
Italy	40.6%	40.9%	18.6%
Japan	58.3%	25.4%	16.3%
Singapore	45.4%	43.0%	11.6%
South Korea	47.9%	45.7%	6.4%
U.K.	37.2%	41.3%	21.6%
U.S.	44.3%	41.9%	13.9%
All	45.9%	39.7%	14.4%

**Figure 35:** How do you typically obtain video games?

Global readers are almost evenly split between purchasing physical books and e-books, however preferences vary greatly by country. E-books are most popular in India where 71.1 percent prefer them, while physical books are most popular in Japan at 62.0 percent.

Country	I download e-books and read them offline	I purchase a physical copy
<b>France</b>	45.8%	54.2%
<b>Germany</b>	42.6%	57.4%
<b>India</b>	71.1%	28.9%
<b>Italy</b>	54.2%	45.8%
<b>Japan</b>	38.0%	62.0%
<b>Singapore</b>	62.2%	37.8%
<b>South Korea</b>	43.5%	56.5%
<b>U.K.</b>	47.7%	52.3%
<b>U.S.</b>	55.9%	44.1%
<b>All</b>	<b>51.6%</b>	<b>48.4%</b>

**Figure 36:** How do you typically obtain books?

Nearly 55 percent of people 18-25 prefer physical books, more than any other age group. The majority of consumers 26 and older prefer e-books.

Age	I download e-books and read them offline	I purchase a physical copy
<b>18-25</b>	45.1%	54.9%
<b>26-35</b>	55.1%	44.9%
<b>36-45</b>	52.4%	47.6%
<b>46-60</b>	51.8%	48.2%
<b>Over 60</b>	51.6%	48.4%
<b>All</b>	<b>51.6%</b>	<b>48.4%</b>

**Figure 37:** How do you typically obtain books?

Online newspapers and magazines are most popular in South Korea, where almost three-quarters (74.0 percent) prefer to read them online rather than download or purchase a physical copy. Downloading newspapers and magazines is most popular in India at 21.1 percent, while physical copies are preferred by a majority of Japanese readers (58.8 percent).

Country	I download them to read offline	I purchase a physical copy	I read them online
<b>France</b>	18.5%	23.0%	58.6%
<b>Germany</b>	11.5%	37.7%	50.9%
<b>India</b>	21.1%	21.6%	57.3%
<b>Italy</b>	15.4%	24.0%	60.7%
<b>Japan</b>	14.7%	58.8%	26.5%
<b>Singapore</b>	17.3%	24.9%	57.8%
<b>South Korea</b>	11.3%	14.8%	74.0%
<b>U.K.</b>	12.1%	27.3%	60.7%
<b>U.S.</b>	10.3%	30.6%	59.1%
<b>All</b>	<b>14.8%</b>	<b>28.4%</b>	<b>56.8%</b>

**Figure 38:** How do you typically obtain newspapers or magazines?

## MOVIE THEATERS AND ONLINE SHOPPING ARE THE CHOICE FOR DIGITAL CONSUMERS

Online video streaming lets consumers watch movies at any time on virtually any device. However, people still prefer to watch movies in a theater. More than 39 percent of global consumers would rather go to a movie theater than watch a movie online or on TV. Watching movies in a theater is preferred by 60.2 percent of South Koreans, but fewer than a third of the people in Germany, the U.K., and the U.S. prefer the theater experience. TV viewing of movies is highest in the U.K. at 43.4 percent, while online movie viewing is highest in Singapore at 41.8 percent.

Country	Go to a movie theater	Watch a movie on TV	Watch a movie online
France	40.8%	33.2%	26.0%
Germany	28.6%	34.2%	37.2%
India	44.4%	18.4%	37.2%
Italy	36.6%	34.4%	29.0%
Japan	39.4%	37.8%	22.8%
Singapore	41.4%	16.8%	41.8%
South Korea	60.2%	14.2%	25.6%
U.K.	31.4%	43.4%	25.2%
U.S.	29.4%	40.8%	29.8%
All	39.1%	30.4%	30.5%

Figure 39: How do you prefer to watch movies?

Watching movies in a theater is most popular with the 18-35 age group. Watching on TV is preferred by older viewers, with 47.1 percent of those over 60 choosing to watch on television but only 16.5 percent of those 18-25 doing so. Online movie viewing is most popular with younger viewers.

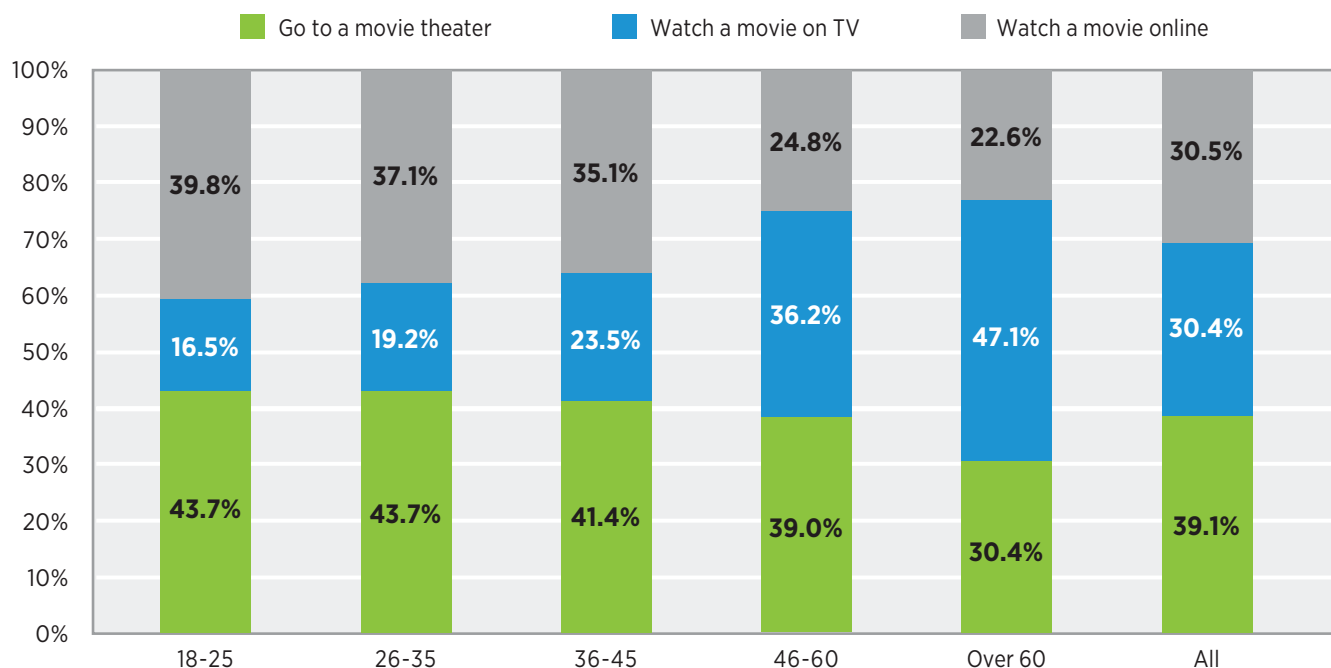


Figure 40: How do you prefer to watch movies?

The convenience of online shopping continues to impact the financial health of traditional brick and mortar retailers. More than half of global consumers (51.4 percent) prefer to shop online rather than going to a physical retail store. Online shopping is most popular in India (67.2 percent) and South Korea (60.4 percent) while physical retail is the clear choice in Japan where 60.8 percent prefer to shop at a retail store.

Country	Shop at a retail store	Shop online
<b>France</b>	49.4%	50.6%
<b>Germany</b>	49.4%	50.6%
<b>India</b>	32.8%	67.2%
<b>Italy</b>	50.2%	49.8%
<b>Japan</b>	60.8%	39.2%
<b>Singapore</b>	52.2%	47.8%
<b>South Korea</b>	39.6%	60.4%
<b>U.K.</b>	52.8%	47.2%
<b>U.S.</b>	49.8%	50.2%
<b>All</b>	<b>48.6%</b>	<b>51.4%</b>

**Figure 41:** How do you prefer to shop?

A majority of people over 60 (56.1 percent) and age 18-25 (51.8 percent) prefer to shop at physical stores. Online shopping is most popular with consumers 36-45 with 57.8 percent choosing online shopping over retail stores.

Age	Shop at a retail store	Shop online
<b>18-25</b>	51.8%	48.2%
<b>26-35</b>	45.8%	54.3%
<b>36-45</b>	42.2%	57.8%
<b>46-60</b>	47.4%	52.7%
<b>Over 60</b>	56.1%	44.0%
<b>All</b>	<b>48.6%</b>	<b>51.4%</b>

**Figure 42:** How do you prefer to shop?

Women are equally likely to shop online as in store, but men have a slight preference for online shopping.

Gender	Shop at a retail store	Shop online
<b>Female</b>	50.0%	50.0%
<b>Male</b>	47.1%	52.9%
<b>All</b>	<b>48.6%</b>	<b>51.4%</b>

**Figure 43:** How do you prefer to shop?

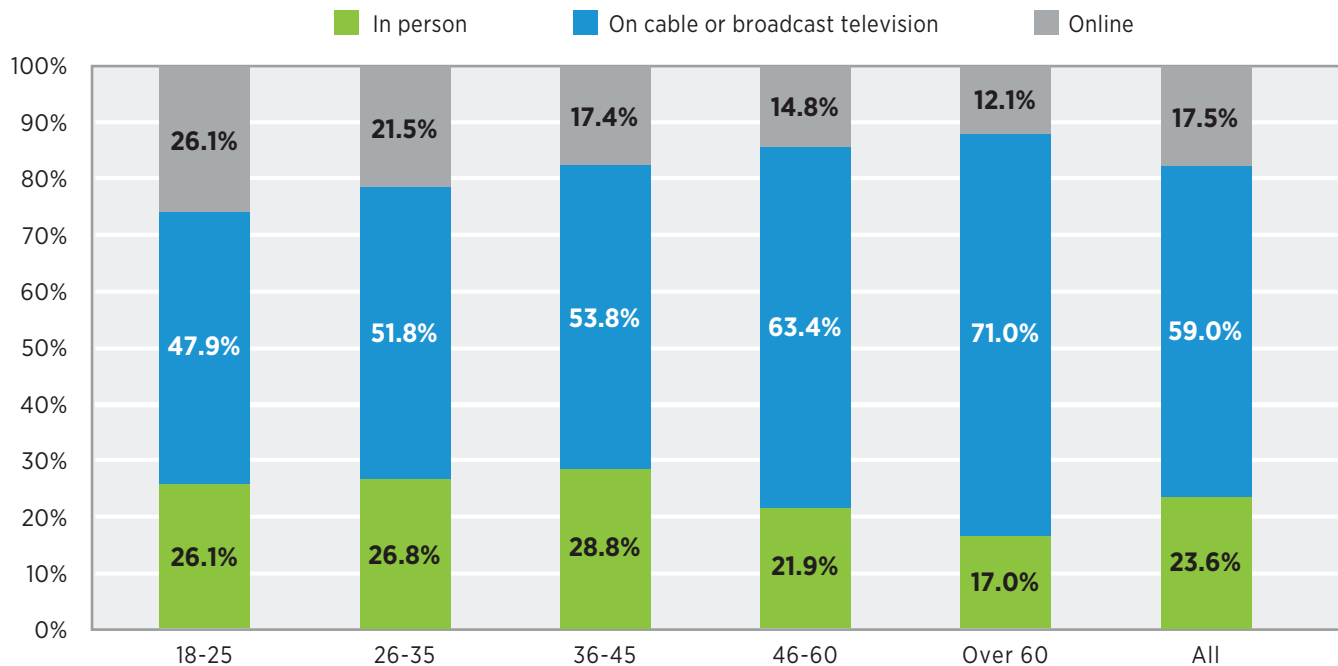
## SPORTS FANS STILL TURN TO TV TO WATCH THE GAME

For sports fans, television is the clear choice for watching a game. 59.0 percent of people prefer to watch sports on television rather than in person or online. Television is preferred by 73.4 percent of Japanese sports fans, the highest of any country. Fans in France and the U.K. enjoy the in-person experience more than any other country, with 33.8 percent preferring to be at the event. Japanese viewers are the least likely to attend sporting events at 11.6 percent. Indians enjoy watching matches online more than any other country, with more than a quarter preferring to watch online.

Country	In person	On cable or broadcast television	Online
<b>France</b>	33.8%	53.4%	12.8%
<b>Germany</b>	21.4%	57.6%	21.0%
<b>India</b>	20.2%	54.4%	25.4%
<b>Italy</b>	20.6%	68.6%	10.8%
<b>Japan</b>	11.6%	73.4%	15.0%
<b>Singapore</b>	22.8%	54.6%	22.6%
<b>South Korea</b>	15.8%	61.8%	22.4%
<b>U.K.</b>	33.8%	51.4%	14.8%
<b>U.S.</b>	32.2%	55.4%	12.4%
<b>All</b>	<b>23.6%</b>	<b>59.0%</b>	<b>17.5%</b>

**Figure 44:** How do you prefer to watch sporting events?

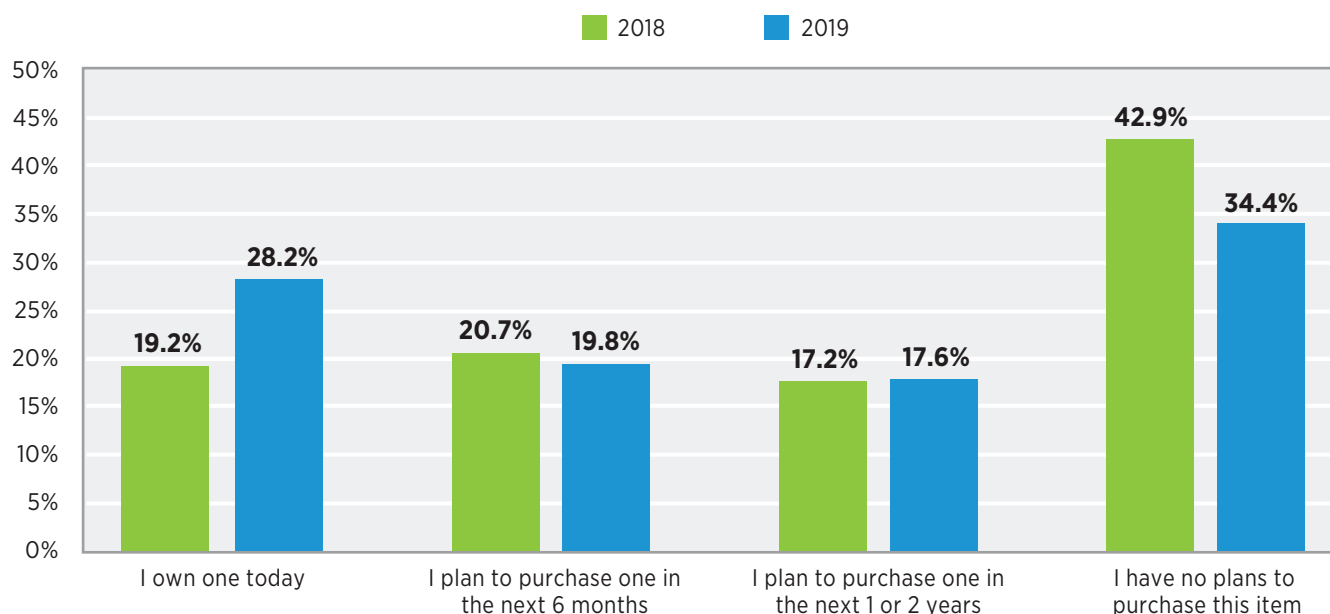
Fans age 18-25 are the most likely to watch sports online and least likely to watch on TV. Older fans prefer to watch the action on cable or broadcast TV.



**Figure 45:** How do you prefer to watch sporting events?

## DIGITAL DEVICE OWNERSHIP IS GROWING

Digital assistants are increasingly popular. More than 28 percent of global consumers currently have a digital assistant such as Amazon Echo, Google Home Assistant or Apple HomePod. Use of the devices has grown significantly over the last year from 19.2 percent.



**Figure 46:** Do you have or are you planning to purchase an internet-connected digital assistant (such as Amazon Echo, Google Home Assistant, Apple HomePod)? (2018 and 2109)

Ownership of digital assistants is highest in India (40.0 percent) and the U.K. (38.4 percent). Fewer than 15 percent of Japanese consumers own a digital assistant, with two-thirds having no plans to purchase one.

Country	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
France	23.6%	23.8%	20.8%	31.8%
Germany	26.6%	18.0%	15.2%	40.2%
India	40.0%	28.0%	16.6%	15.4%
Italy	23.0%	27.0%	19.4%	30.6%
Japan	14.8%	6.8%	12.4%	66.0%
Singapore	23.8%	27.6%	20.4%	28.2%
South Korea	28.4%	19.0%	26.4%	26.2%
U.K.	38.4%	15.0%	12.2%	34.4%
U.S.	35.6%	12.6%	15.2%	36.6%
All	28.2%	19.8%	17.6%	34.4%

**Figure 47:** Do you have or are you planning to purchase an internet-connected digital assistant (such as Amazon Echo, Google Home Assistant, Apple HomePod)?

Ownership of digital assistants is highest among 26-45-year olds, with more than a third currently owning one. However, nearly 43 percent of those over 60 have no plans to purchase a digital assistant.

Age	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
<b>18-25</b>	27.5%	19.9%	14.9%	37.7%
<b>26-35</b>	36.3%	22.9%	16.0%	24.8%
<b>36-45</b>	34.4%	22.5%	16.4%	26.7%
<b>46-60</b>	25.3%	17.0%	20.2%	37.4%
<b>Over 60</b>	20.5%	18.4%	18.3%	42.9%
<b>All</b>	<b>28.2%</b>	<b>19.8%</b>	<b>17.6%</b>	<b>34.4%</b>

**Figure 48:** Do you have or are you planning to purchase an internet-connected digital assistant (such as Amazon Echo, Google Home Assistant, Apple HomePod)?

Internet-enabled security devices such as security cameras and doorbells are an increasingly popular way to keep homes safe. 19.0 percent of global consumers currently own one and 19.3 percent plan to purchase a device in the next six months. Ownership is highest in Singapore where more than one-quarter (26.4 percent) currently use an internet-connected security device. Once again, Japanese consumers are the least likely to use one, with more than two-thirds saying they have no plans to purchase one.

Country	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
<b>France</b>	16.8%	18.4%	22.8%	42.0%
<b>Germany</b>	12.4%	14.8%	21.4%	51.4%
<b>India</b>	24.6%	33.8%	24.4%	17.2%
<b>Italy</b>	22.4%	21.0%	24.0%	32.6%
<b>Japan</b>	14.2%	5.6%	13.2%	67.0%
<b>Singapore</b>	26.4%	20.2%	25.0%	28.4%
<b>South Korea</b>	21.4%	19.0%	27.4%	32.2%
<b>U.K.</b>	15.2%	18.2%	25.4%	41.2%
<b>U.S.</b>	17.4%	22.6%	23.0%	37.0%
<b>All</b>	<b>19.0%</b>	<b>19.3%</b>	<b>23.0%</b>	<b>38.8%</b>

**Figure 49:** Do you have or are you planning to purchase an internet-connected security device (such as a video doorbell, surveillance camera, or smart lock)?

Many internet-connected devices offer the ability to automate tasks and simplify daily routines. Globally, 15.9 percent of consumers currently take advantage of internet-connected home automation capabilities. This number is highest in the U.S., where 22.2 percent own internet-connected home automation devices and utilities.

Country	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
<b>France</b>	12.2%	18.0%	25.6%	44.2%
<b>Germany</b>	17.6%	14.0%	25.2%	43.2%
<b>India</b>	20.4%	25.8%	26.2%	27.6%
<b>Italy</b>	14.8%	18.6%	27.8%	38.8%
<b>Japan</b>	7.8%	6.2%	11.4%	74.6%
<b>Singapore</b>	12.6%	20.2%	27.6%	39.6%
<b>South Korea</b>	17.4%	17.8%	33.8%	31.0%
<b>U.K.</b>	17.8%	13.8%	26.8%	41.6%
<b>U.S.</b>	22.2%	14.0%	22.4%	41.4%
<b>All</b>	<b>15.9%</b>	<b>16.5%</b>	<b>25.2%</b>	<b>42.4%</b>

**Figure 50:** Do you have or are you planning to purchase an internet-connected home automation and utilities (such as Nest thermostat, smart plugs and lighting, internet-connected refrigerator)?

Men are more likely to own internet-connected home automation devices or purchase them in the future.

Gender	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
<b>Female</b>	14.7%	14.7%	24.0%	46.6%
<b>Male</b>	17.0%	18.2%	26.4%	38.4%
<b>All</b>	<b>15.9%</b>	<b>16.5%</b>	<b>25.2%</b>	<b>42.4%</b>

**Figure 51:** Do you have or are you planning to purchase an internet-connected home automation and utilities (such as Nest thermostat, smart plugs and lighting, internet-connected refrigerator)?

Health and fitness trackers have been available for many years and are increasing in sophistication as the latest generation of smart watches automatically track many daily activities. Globally, 28.6 percent of people currently own one. Ownership is highest in Singapore, where more than 39 percent own a health and fitness tracker.

Country	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
France	27.4%	16.2%	15.6%	40.8%
Germany	28.2%	15.6%	16.8%	39.4%
India	37.2%	32.4%	13.2%	17.2%
Italy	26.4%	19.4%	18.6%	35.6%
Japan	8.8%	6.0%	13.4%	71.8%
Singapore	39.2%	20.4%	17.2%	23.2%
South Korea	23.4%	17.6%	28.0%	31.0%
U.K.	30.4%	17.0%	13.4%	39.2%
U.S.	36.0%	13.2%	13.4%	37.4%
All	28.6%	17.5%	16.6%	37.3%

**Figure 52:** Do you have or are you planning to purchase a health and fitness tracker (such as Fitbit, Garmin, Apple Watch)?

Health and fitness trackers are most popular among people 36-45, with more than 37 percent currently using one. However, half of those over 60 have no plans to purchase one.

Age	I own one today	I plan to purchase one in the next 6 months	I plan to purchase one in the next 1 or 2 years	I have no plans to purchase this item
18-25	30.2%	18.3%	16.5%	35.0%
26-35	33.7%	22.4%	16.5%	27.4%
36-45	37.3%	18.0%	14.8%	29.9%
46-60	26.9%	16.3%	16.7%	40.1%
Over 60	17.7%	14.0%	18.3%	50.0%
All	28.6%	17.5%	16.6%	37.3%

**Figure 53:** Do you have or are you planning to purchase a health and fitness tracker (such as Fitbit, Garmin, Apple Watch)?

## CONSUMERS ARE LEERY OF DIGITAL DEVICES

Digital assistants are becoming more popular, but many consumers are still skeptical about the devices. Only 41.6 percent of global consumers would definitely trust a digital assistant to provide general information such as the weather or news. The most skeptical consumers are in South Korea, where only 20.2 percent definitely trust a digital assistant for such information. Nearly half of global consumers might trust a digital assistant, while nearly 10 percent do not trust the devices.

Country	I definitely trust it	I might trust it	I do not trust it
France	30.8%	53.0%	16.2%
Germany	60.2%	29.0%	10.8%
India	63.6%	32.8%	3.6%
Italy	41.2%	52.6%	6.2%
Japan	21.2%	62.0%	16.8%
Singapore	34.6%	60.6%	4.8%
South Korea	20.2%	72.0%	7.8%
U.K.	49.4%	40.6%	10.0%
U.S.	53.4%	34.6%	12.0%
<b>All</b>	<b>41.6%</b>	<b>48.6%</b>	<b>9.8%</b>

**Figure 54:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod to provide general information (such as weather, news, research, product information)?

While the general public might be skeptical about trusting digital assistants to provide information, current owners of the devices are much more trusting of their abilities. More than 67 percent of people who currently own a digital assistant trust the device to provide general information. Only 2.3 percent of current owners do not trust them to perform this task.

Country	I definitely trust it	I might trust it	I do not trust it
France	60.2%	35.6%	4.2%
Germany	78.2%	21.1%	0.8%
India	85.5%	13.0%	1.5%
Italy	65.2%	33.9%	0.9%
Japan	44.6%	52.7%	2.7%
Singapore	62.2%	36.1%	1.7%
South Korea	33.8%	61.3%	4.9%
U.K.	72.9%	25.0%	2.1%
U.S.	77.5%	20.2%	2.3%
<b>All</b>	<b>67.2%</b>	<b>30.5%</b>	<b>2.3%</b>

**Figure 55:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod to provide general information (such as weather, news, research, product information)? (Current owners)

Digital assistants are more trusted to play media than they are to provide information. More than half of global consumers would trust a digital assistant to play music and videos, with two-thirds of those in India and Germany trusting the devices to handle the task.

Country	I definitely trust it	I might trust it	I do not trust it
France	37.2%	50.4%	12.4%
Germany	66.2%	27.8%	6.0%
India	67.0%	30.6%	2.4%
Italy	51.2%	42.4%	6.4%
Japan	26.8%	61.0%	12.2%
Singapore	50.8%	43.8%	5.4%
South Korea	33.8%	60.8%	5.4%
U.K.	57.4%	34.4%	8.2%
U.S.	63.6%	28.8%	7.6%
All	<b>50.5%</b>	<b>42.2%</b>	<b>7.3%</b>

**Figure 56:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod to play media such as music or videos?

However, only one-quarter of global consumers trust digital assistants to handle home-automation tasks. More than 18 percent do not believe the devices can handle this chore.

Country	I definitely trust it	I might trust it	I do not trust it
France	21.6%	56.0%	22.4%
Germany	35.6%	51.4%	13.0%
India	47.0%	45.8%	7.2%
Italy	27.8%	57.0%	15.2%
Japan	12.2%	59.8%	28.0%
Singapore	20.8%	60.6%	18.6%
South Korea	16.8%	69.6%	13.6%
U.K.	19.0%	56.4%	24.6%
U.S.	24.8%	50.4%	24.8%
All	<b>25.1%</b>	<b>56.3%</b>	<b>18.6%</b>

**Figure 57:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod to perform home automation tasks?

Consumers 26-45 are most likely to allow a digital assistant to perform home automation. More than 20 percent of those 18-25 and over 60 do not believe the devices can handle the task.

Age	I definitely trust it	I might trust it	I do not trust it
<b>18-25</b>	24.5%	53.4%	22.1%
<b>26-35</b>	31.0%	54.6%	14.4%
<b>36-45</b>	28.5%	58.9%	12.7%
<b>46-60</b>	22.4%	58.5%	19.1%
<b>Over 60</b>	21.2%	54.5%	24.3%
<b>All</b>	<b>25.1%</b>	<b>56.3%</b>	<b>18.6%</b>

**Figure 58:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod to perform home automation tasks?

More than half of consumers are unsure about trusting a digital assistant to maintain their calendar. 35.7 percent believe they can handle the task, while 14.0 percent do not trust them.

Country	I definitely trust it	I might trust it	I do not trust it
<b>France</b>	26.0%	52.6%	21.4%
<b>Germany</b>	48.6%	40.0%	11.4%
<b>India</b>	59.4%	35.0%	5.6%
<b>Italy</b>	38.8%	50.4%	10.8%
<b>Japan</b>	18.4%	60.0%	21.6%
<b>Singapore</b>	34.6%	56.2%	9.2%
<b>South Korea</b>	27.6%	61.4%	11.0%
<b>U.K.</b>	30.8%	50.2%	19.0%
<b>U.S.</b>	37.2%	47.2%	15.6%
<b>All</b>	<b>35.7%</b>	<b>50.3%</b>	<b>14.0%</b>

**Figure 59:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod to maintain your calendar (recording appointments and setting reminders)?

For online shopping, 31.1 percent of people trust a digital assistant to place online orders. However, nearly 21 percent do not believe the devices can handle the task.

Country	I definitely trust it	I might trust it	I do not trust it
<b>France</b>	27.2%	42.4%	30.4%
<b>Germany</b>	31.6%	42.8%	25.6%
<b>India</b>	60.6%	32.4%	7.0%
<b>Italy</b>	32.6%	45.2%	22.2%
<b>Japan</b>	21.4%	59.4%	19.2%
<b>Singapore</b>	25.8%	59.0%	15.2%
<b>South Korea</b>	26.8%	61.8%	11.4%
<b>U.K.</b>	24.6%	46.6%	28.8%
<b>U.S.</b>	29.2%	44.0%	26.8%
<b>All</b>	<b>31.1%</b>	<b>48.2%</b>	<b>20.7%</b>

**Figure 60:** Would you trust a digital assistant such as Amazon Alexa, Google Home, or Apple HomePod for online shopping?

## CONSUMERS ARE INCREASINGLY CONCERNED ABOUT ONLINE SECURITY

With so many recent high-profile cyber-attacks and breaches of personal information from major online sites, consumers are increasingly concerned about online security. 45.6 percent of global consumers are more concerned about their personal information being stolen than they were a year ago. Only 7.2 percent have become less concerned in the last year. Security concerns have grown the fastest in India, where 60.8 percent are more concerned than a year ago.

Country	I am more concerned about my personal information being stolen online than a year ago	My concerns about my personal information being stolen online have not changed in the last year	I am less concerned about my personal information being stolen online than a year ago
France	50.8%	42.2%	7.0%
Germany	32.0%	58.6%	9.4%
India	60.8%	24.2%	15.0%
Italy	38.4%	54.6%	7.0%
Japan	34.6%	60.4%	5.0%
Singapore	56.2%	39.4%	4.4%
South Korea	46.0%	46.0%	8.0%
U.K.	43.0%	52.2%	4.8%
U.S.	49.0%	47.2%	3.8%
All	45.6%	47.2%	7.2%

**Figure 61:** How have your concerns about online security changed in the last year?

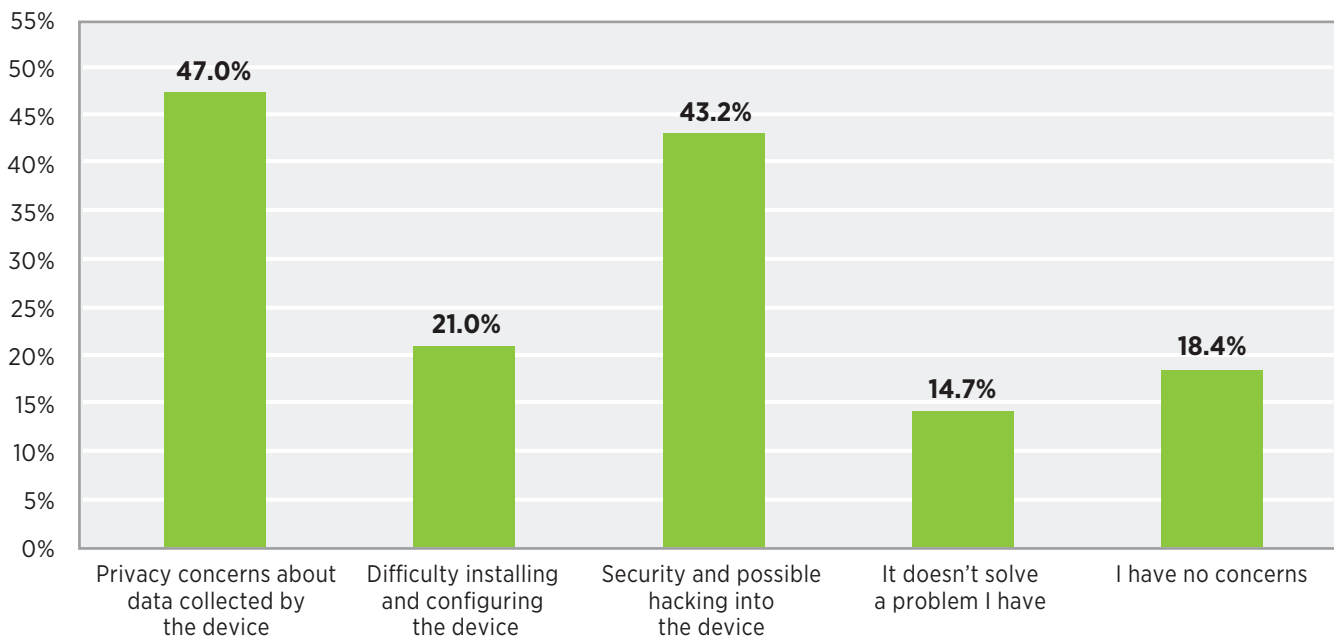
Online security concerns have increased the most among younger consumers, with nearly half of those 18-45 more concerned about their personal information being stolen than a year ago.

Age	I am more concerned about my personal information being stolen online than a year ago	My concerns about my personal information being stolen online have not changed in the last year	I am less concerned about my personal information being stolen online than a year ago
18-25	48.7%	43.6%	7.8%
26-35	49.2%	42.2%	8.6%
36-45	48.7%	46.2%	5.2%
46-60	43.0%	50.2%	6.9%
Over 60	41.7%	50.8%	7.6%
All	45.6%	47.2%	7.2%

**Figure 62:** How have your concerns about online security changed in the last year?

## MOST CONSUMERS HAVE CONCERNS ABOUT THE SECURITY OF DIGITAL DEVICES

Digital assistants promise to make consumers' lives easier by providing easy access to information and automating routine tasks. However, more than 80 percent of consumers have concerns about using the devices. Globally, 47.0 percent are concerned about privacy of data collected by digital assistants and 43.2 percent worry about security and hackers accessing the devices. 21.0 percent are concerned about difficulties installing and configuring digital assistants, and 14.7 percent don't think they solve a problem they have. Only 18.4 percent have no concerns.



**Figure 63:** What concerns do you have about using an internet-connected digital assistant (such as Amazon Echo, Google Home Assistant, Apple HomePod)? (Select all that apply)

Privacy concerns are highest in Singapore at 59.6 percent. Italians have the fewest worries, with 23.2 percent not concerned about using digital assistants.

Country	Privacy concerns about data collected by the device	Difficulty installing and configuring the device	Security and possible hacking into the device	It doesn't solve a problem I have	I have no concerns
France	44.4%	19.0%	47.4%	14.0%	17.2%
Germany	45.8%	19.4%	45.8%	19.0%	18.0%
India	46.0%	30.0%	39.2%	6.6%	20.8%
Italy	41.6%	19.4%	35.6%	11.8%	23.2%
Japan	39.6%	23.0%	34.2%	29.4%	20.0%
Singapore	59.6%	26.0%	49.0%	10.4%	10.6%
South Korea	45.8%	18.6%	45.8%	10.4%	14.2%
U.K.	46.4%	18.8%	43.0%	14.0%	22.2%
U.S.	53.8%	14.8%	49.0%	16.4%	19.4%
All	47.0%	21.0%	43.2%	14.7%	18.4%

**Figure 64:** What concerns do you have about using an internet-connected digital assistant (such as Amazon Echo, Google Home Assistant, Apple HomePod)? (Select all that apply)

Nearly 80 percent of global consumers are concerned about the use of internet-connected security devices, with more than a third (37.3 percent) concerned about the privacy of data collected by the devices and 44.3 percent worried about hacking.

Country	Privacy concerns about data collected by the device	Difficulty installing and configuring the device	Security and possible hacking into the device	It doesn't solve a problem I have	I have no concerns
France	37.2%	17.2%	45.4%	14.6%	19.0%
Germany	35.2%	18.0%	46.0%	16.0%	21.2%
India	36.2%	25.8%	42.6%	6.6%	23.4%
Italy	33.2%	16.6%	37.2%	7.4%	26.2%
Japan	36.4%	24.6%	39.6%	23.8%	19.0%
Singapore	39.8%	26.0%	55.8%	9.4%	13.0%
South Korea	40.8%	19.6%	48.6%	8.4%	14.4%
U.K.	37.8%	20.8%	40.2%	12.0%	25.8%
U.S.	39.2%	23.6%	43.6%	15.0%	23.0%
All	<b>37.3%</b>	<b>21.4%</b>	<b>44.3%</b>	<b>12.6%</b>	<b>20.6%</b>

**Figure 65:** What concerns do you have about using an internet-connected security device (such as a video doorbell, surveillance camera, or smart lock)? (Select all that apply)

More than one-third of people are concerned about data privacy and hacking into internet-connected home automation devices and utilities.

Country	Privacy concerns about data collected by the device	Difficulty installing and configuring the device	Security and possible hacking into the device	It doesn't solve a problem I have	I have no concerns
France	33.8%	19.4%	37.6%	18.0%	21.6%
Germany	30.4%	20.2%	38.4%	16.8%	25.8%
India	32.8%	33.6%	31.6%	10.4%	24.2%
Italy	26.4%	21.4%	28.6%	11.2%	30.0%
Japan	32.4%	25.0%	31.4%	28.2%	20.2%
Singapore	44.8%	25.8%	41.6%	10.4%	17.8%
South Korea	35.2%	26.2%	38.0%	8.6%	16.8%
U.K.	34.8%	18.6%	35.6%	14.8%	29.2%
U.S.	34.4%	22.6%	36.8%	17.8%	28.0%
All	<b>33.9%</b>	<b>23.6%</b>	<b>35.5%</b>	<b>15.1%</b>	<b>23.7%</b>

**Figure 66:** What concerns do you have about using internet-connected home automation and utilities (such as Nest thermostat, smart plugs and lighting, internet-connected refrigerator)? (Select all that apply)

More than 36 percent of people have no concerns about using health and fitness trackers, the highest of any device in the survey. This reflects the relative maturity and acceptance of fitness trackers by global consumers. However, more than 30 percent remain concerned about the privacy of data collected by the devices.

Country	Privacy concerns about data collected by the device	Difficulty installing and configuring the device	Security and possible hacking into the device	It doesn't solve a problem I have	I have no concerns
France	35.0%	10.4%	28.2%	11.0%	34.6%
Germany	29.2%	12.0%	26.8%	20.6%	35.2%
India	26.8%	24.2%	25.6%	8.2%	37.4%
Italy	25.6%	11.2%	21.8%	12.8%	40.8%
Japan	31.0%	17.2%	28.4%	24.8%	27.4%
Singapore	34.4%	13.8%	26.0%	16.6%	32.8%
South Korea	37.0%	14.8%	28.0%	12.4%	25.6%
U.K.	28.0%	9.8%	22.2%	12.0%	45.8%
U.S.	26.6%	9.6%	21.0%	19.2%	46.2%
All	30.4%	13.7%	25.3%	15.3%	36.2%

**Figure 67:** What concerns do you have about using a health and fitness tracker (such as Fitbit, Garmin, Apple Watch)? (Select all that apply)

## EXPECTATIONS ARE HIGH FOR 5G NETWORKING

The global wireless communications industry has begun preparing for the rollout of the fifth generation of wireless networking (5G) with the promise of offering consumers faster speeds that can potentially change how people and Internet of Things (IoT) enabled devices communicate.

Nearly three-quarters of global consumers (72.1 percent) expect 5G networking will bring faster download speeds. Expectations are highest in India, with 88.2 percent expecting to see improved performance. However, skepticism remains high in Germany and France, with more than a quarter of consumers expecting it will have no major impact. Japanese consumers are the least aware of 5G networking, with 28.6 percent saying they don't know what it is. Awareness is highest in South Korea, with only 2.8 percent who are not familiar with it.

Country	I expect faster download speeds	I don't expect it to have a major impact	I don't know what it is
France	67.4%	26.8%	5.8%
Germany	60.6%	29.6%	9.8%
India	88.2%	8.2%	3.6%
Italy	76.4%	18.2%	5.4%
Japan	58.4%	13.0%	28.6%
Singapore	81.4%	15.0%	3.6%
South Korea	75.6%	21.6%	2.8%
U.K.	68.4%	20.8%	10.8%
U.S.	72.8%	17.2%	10.0%
All	72.1%	18.9%	9.0%

**Figure 68:** What are your expectations for 5G wireless networking?

Consumers 18-25 and over 60 are the most skeptical about 5G networking, with more than 20 percent expecting no impact. Those over 60 are most likely to be unaware of 5G.

Age	I expect faster download speeds	I don't expect it to have a major impact	I don't know what it is
<b>18-25</b>	73.1%	20.2%	6.7%
<b>26-35</b>	75.0%	18.4%	6.7%
<b>36-45</b>	73.4%	18.8%	7.8%
<b>46-60</b>	73.7%	17.2%	9.2%
<b>Over 60</b>	65.7%	21.2%	13.2%
<b>All</b>	<b>72.1%</b>	<b>18.9%</b>	<b>9.0%</b>

**Figure 69:** What are your expectations for 5G wireless networking?

Men have higher expectations from 5G than women, with almost three-quarters expecting faster download speeds. 12.0 percent of women are not aware of 5G.

Gender	I expect faster download speeds	I don't expect it to have a major impact	I don't know what it is
<b>Female</b>	69.2%	18.7%	12.0%
<b>Male</b>	74.9%	19.1%	6.0%
<b>All</b>	<b>72.1%</b>	<b>18.9%</b>	<b>9.0%</b>

**Figure 70:** What are your expectations for 5G wireless networking?

## MOST PEOPLE FIND DIGITAL CONTENT FRUSTRATING

Although consumers overwhelmingly feel technology has had a positive impact on their lives, more than 86 percent remain frustrated with digital content. The highest level of frustration is in Singapore where 93 percent have challenges with digital content.

Consumers are most frustrated by errors, with nearly 35 percent noting this as their primary issue followed by 31 percent who are annoyed by rebuffering of digital content. Germans are most likely to complain about errors, while Indians are most annoyed by rebuffering.

Country	When content stops playing or rebuffers	When it takes too long to download	When my experience is disrupted by errors	I don't find it frustrating
France	32.2%	26.6%	28.4%	12.8%
Germany	17.0%	18.8%	45.8%	18.4%
India	43.8%	25.4%	20.8%	10.0%
Italy	32.4%	19.4%	34.0%	14.2%
Japan	28.6%	18.2%	37.2%	16.0%
Singapore	26.6%	21.4%	45.2%	6.8%
South Korea	28.0%	20.8%	40.0%	11.2%
U.K.	35.4%	16.4%	31.2%	17.0%
U.S.	35.2%	17.8%	31.6%	15.4%
All	31.0%	20.6%	34.9%	13.5%

**Figure 71:** What is the most frustrating challenge you face with digital content?

Older consumers are less likely to be frustrated by digital content than younger ones.

Age	When content stops playing or rebuffers	When it takes too long to download	When my experience is disrupted by errors	I don't find it frustrating
18-25	35.8%	18.8%	36.1%	9.4%
26-35	36.1%	17.8%	37.9%	8.3%
36-45	37.0%	19.2%	32.6%	11.2%
46-60	28.4%	22.5%	32.8%	16.3%
Over 60	21.9%	22.5%	36.6%	19.0%
All	31.0%	20.6%	34.9%	13.5%

**Figure 72:** What is the most frustrating challenge you face with digital content?

## ISPS ARE BLAMED WHEN CONSUMERS HAVE CHALLENGES ACCESSING DIGITAL CONTENT

When consumers have trouble downloading or streaming online content, they blame their ISP. More than half (53.8 percent) hold their ISP responsible, while 23.5 percent blame the content provider and 10.4 percent think the device is at fault. Two-thirds of Indians hold their ISP responsible, while more than 38 percent of South Koreans blame the content provider. Only 12.3 percent do not blame anyone for issues experienced when downloading and streaming content.

Country	My Internet Service Provider	The content provider	The device	No one
France	51.0%	20.6%	12.2%	16.2%
Germany	49.6%	16.8%	12.2%	21.4%
India	66.8%	24.0%	3.6%	5.6%
Italy	61.8%	20.0%	9.8%	8.4%
Japan	32.8%	34.6%	15.8%	16.8%
Singapore	56.6%	23.0%	10.6%	9.8%
South Korea	45.8%	38.2%	10.8%	5.2%
U.K.	61.2%	15.0%	9.2%	14.6%
U.S.	58.6%	19.2%	9.6%	12.6%
All	53.8%	23.5%	10.4%	12.3%

**Figure 73:** When you have trouble downloading or streaming online content, who do you hold responsible?

Consumers 26-35 blame the content provider more than other age group.

Age	My Internet Service Provider	The content provider	The device	No one
18-25	53.9%	20.5%	12.7%	12.9%
26-35	52.8%	28.1%	9.3%	9.9%
36-45	55.2%	25.0%	10.6%	9.2%
46-60	56.0%	23.0%	7.9%	13.1%
Over 60	50.3%	20.8%	13.3%	15.6%
All	53.8%	23.5%	10.4%	12.3%

**Figure 74:** When you have trouble downloading or streaming online content, who do you hold responsible?

# CONCLUSIONS AND RECOMMENDATIONS

As digital technology has become an integral part of our daily lives, performance expectations have risen. Consumers expect secure, high-quality digital experiences on all of their internet-connected devices. To keep loyal customers, grow market share and ultimately maximize revenue opportunities, content distributors should consider the following:

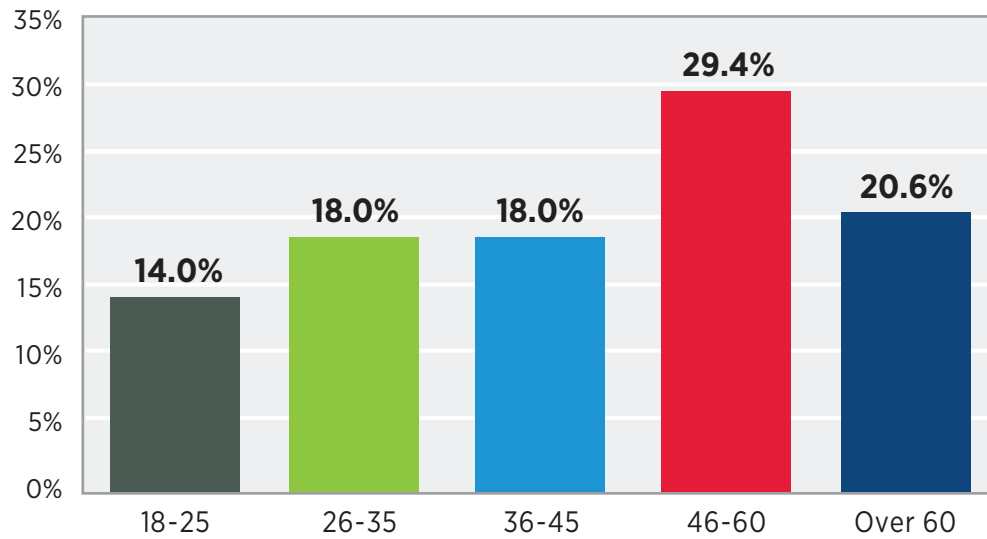
## IMPLEMENT CLOUD-BASED SECURITY SOLUTIONS

Online security continues to be a major concern for consumers, with 46 percent of global consumers more concerned about their personal information being stolen than one year ago. If your site is breached and customer data is stolen, it will have a major impact on consumer loyalty and future revenue. To protect your web infrastructure and help secure customer data, a Web Application Firewall (WAF) should be utilized to protect web servers from malicious attacks. By utilizing a cloud-based WAF solution that is integrated between a Content Delivery Network (CDN) and the web application infrastructure, such as the Limelight Web Application Firewall, only requests for content that has not been previously cached need to be inspected by the WAF. This helps increase site performance by reducing the amount of traffic that needs to be inspected. In addition, Bot traffic mitigation should also be employed to guard against the increasing number of malicious bots being used to try to exploit potential security vulnerabilities and exfiltrate sensitive data.

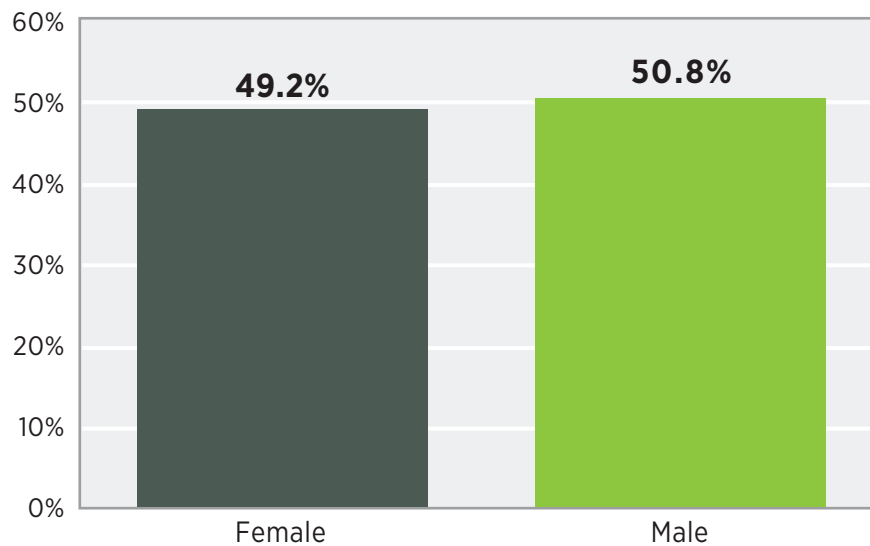
## ENSURE CONSISTENT DELIVERY TO ALL DEVICES

Consumers are choosing online digital content more than ever before, with online streaming being the most popular way to enjoy digital music, movies, and TV shows. However, more than 86 percent are frustrated with digital content, with the primary complaints being errors and content stopping and rebuffering. Mobile phones are increasingly being used to stream videos and listen to music. However mobile connections are often subject to changes in bandwidth and network latencies that can interrupt content playback if content is not delivered at the optimal bitrate to match the user's current network conditions. Leveraging a CDN that has been optimized to deliver high-quality audio and video streaming with low rebuffer rates ensures the experience viewers expect without the frustrations that cause them to abandon content. Limelight's Content Delivery Services continually monitoring a user's connection and optimize how content is delivered based on real-time analysis so your customers will receive the highest possible picture and sound quality without experiencing rebuffering.

# APPENDIX



**Figure 75:** How old are you?



**Figure 76:** What is your gender?

# METHODOLOGY

This survey was fielded by a third-party company with access to consumer panels in France, Germany, India, Italy, Japan, Singapore, South Korea, the United Kingdom, and the United States. 500 responses were collected from each country for a total of 4,500 global responses. Survey responses were collected between May 12 and May 29, 2019.

## ABOUT LIMELIGHT NETWORKS

Limelight Networks, Inc. (NASDAQ: LLNW), a leading provider of digital content delivery, video, cloud security, and edge computing services, empowers customers to provide exceptional digital experiences. Limelight's edge services platform includes a unique combination of global private infrastructure, intelligent software, and expert support services that enable current and future workflows. For more information, visit [www.limelight.com](http://www.limelight.com), follow us on Twitter, Facebook, and LinkedIn.

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