Your Emotions on Audio:
The science of brand building with sound.
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Introduction

Audio plays an important role in our emotional lives, and that relationship occurs at a biological level. Audio is one of the fastest-acting triggers of emotional response in the brain\(^1\), and is closely linked with long-term memory\(^2\).

Music and podcasts are two forms of audio we often turn to for emotional impact or escape. We may use an energetic music playlist to get hyped, a break-up song to ease heartache, or a podcast to learn, laugh, and feel. Because of this, audio presents opportunities for consumers and brands who want to build meaningful and emotional connections with consumers.

Amazon Ads and Wondery worked with neuroscience marketing firm MindProber to explore these opportunities, and help brands leverage the scientific power of audio to connect with consumers in relevant ways.

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In the Your Emotions on Audio study, we collected emotional engagement insights using a combination of biometric readings and survey responses from 180 US participants to answer the following questions:

1 **Your emotions on audio.**
What emotional response does streaming audio elicit? Can streaming audio content change moods? Does engagement differ between streaming audio, broadcast audio, and linear TV? How does emotional engagement with streaming audio translate to ad effectiveness for brands?

2 **Your brand on smart speakers.**
Are brand messages delivered in ad-supported audio content on smart speakers perceived differently than those delivered on other devices? How do audio ads with Alexa calls-to-action (CTAs) engage consumers? How can brands use these insights to build meaningful and relevant connections with consumers?

3 **Content and contextual relevance:**
Do different music or podcast genres generate different levels of engagement? How do specific advertiser industries perform against a variety of audio genres or contexts? Which genres deliver higher engagement levels for each industry? How do music and podcasts engage audiences differently, and how do they complement each other?

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1 Definitions for streaming audio, linear TV, and broadcast radio are included in appendix
2 Definition for Alexa CTAs on page 5
Methodology
Amazon Ads and Wondery worked with neuroscience marketing firm MindProber to collect biometric readings from 180 US consumers while streaming podcast and music content in their homes. Participants were assigned to listen to audio content on either mobile, laptop/desktop, or smart speakers. To measure engagement, participants used a hand-held device during listening sessions which collected Second-by-second engagement through heart-rate variability and electrodermal activity (e.g. Galvanic Skin Response). Participants were instructed to listen to three different podcast episodes from a selected list of True Crime, Entertainment, and Family & Kids podcasts. In addition, participants were instructed to partake in two different music listening sessions, each 60 minutes, in a genre of their choice. Music playlists were pre-curated in either R&B, Latin, Rap/Hip-Hop, Country, and Pop. Ads were delivered in music and podcast environments consistent with a typical ad-supported audio experience on Amazon Ads or Wondery. In total, the study collected 1,548 total streaming audio hours over four weeks. Participants responded to survey questions before, during, and after each listening session.

We use the following terms throughout the study. For a complete glossary of terms, see appendix.

1. Participants:
Refers to the 180 consumers who participated in the research in exchange for compensation. Participants were 18+, reside in the US, and were weighted to US Census in age, gender, income, and census region.

2. Engagement:
The biometric score generated by MindProber’s biometric measurement device. Used synonymously with biometric response, physiological response, or emotional engagement.

3. Mood:
Refers to participants’ self-reported mood collected via survey before, during, and after every audio listening session. Used synonymously with emotions.

4. Listening sessions:
Refers to the sum of all sessions where participants listened to audio content (music and/or podcasts). Used synonymously with audio sessions.

5. Alexa CTA:
Refers to ads with voice calls-to-action delivered across ad-supported content on smart speakers. Alexa CTAs can include asking your smart speaker for brand-related actions on Amazon such as adding an item to cart, requesting more information, or setting a reminder. While Alexa CTAs can run on Streaming TV, display, and audio, we focus on Alexa CTAs for streaming audio in this study.
CHAPTER II

Your emotions on audio:
How audio impacts emotions and engagement

Streaming audio has the power to elicit emotion, change moods, and engage listeners more than other types of media.
YOUR EMOTIONS ON AUDIO

Positive emotions
We surveyed participants before, during, and after every audio session. After listening to streaming audio sessions, the most common emotions reported by participants were positive. For example, happiness, joy, optimism, and confidence were the top four emotions reported while anger, annoyance, and sadness were the bottom three.

% of people reported this emotion after listening to streaming audio

<table>
<thead>
<tr>
<th>Emotion</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angry</td>
<td>1%</td>
</tr>
<tr>
<td>Annoyed</td>
<td>2%</td>
</tr>
<tr>
<td>Pessimistic</td>
<td>3%</td>
</tr>
<tr>
<td>Doubtful</td>
<td>4%</td>
</tr>
<tr>
<td>Sad</td>
<td>6%</td>
</tr>
<tr>
<td>Trusting</td>
<td>10%</td>
</tr>
<tr>
<td>Joyful</td>
<td>22%</td>
</tr>
<tr>
<td>Confident</td>
<td>30%</td>
</tr>
<tr>
<td>Optimistic</td>
<td>41%</td>
</tr>
<tr>
<td>Happy</td>
<td>60%</td>
</tr>
</tbody>
</table>
We analyzed self-reported emotions for each of the three research groups – mobile, desktop, and smart speakers. Participants who listened to the audio session through smart speakers reported even higher levels of positive emotion than those who listened to the same content on mobile or desktop devices.

**Reported mood after streaming audio exposure**

- **Positive Emotions**
  - Optimistic
  - Trusting
  - Confident
  - Joyful

- **Negative Emotions**
  - Annoyed
  - Angry
  - Doubtful
  - Sad
  - Pessimistic

**Shifting emotions**

In comparing the pre vs. post survey responses, we found a majority (51%) of participants reported a change in mood after their audio session, with 30% reporting a positive mood change. Self-reported mood changes differed depending on the genre of music or podcast listened to. For example, pop music, country music, and family & kids podcast genres had the highest levels of positive mood change (46%, 39%, and 26% respectively).
**Engagement by channel and device**

Streaming audio also generated strong engagement among participants. Engagement scores for streaming audio were significantly greater than benchmark engagement rates for similar content on broadcast radio and linear TV.

**Engagement Index by Media Channel**

Streaming audio generated +1.6x greater engagement than broadcast radio and +1.4x greater engagement than linear television.

Engagement also differed by the device participants used. Participants listening to streaming audio on smart speakers had higher engagement than those streaming the same content on mobile (+1.5x) and desktop (+1.1x).

**Engagement Index by Device**

Audio content delivered on smart speakers generated higher engagement than the same content delivered on mobile (+1.5x) and desktop (+1.1x).
YOUR EMOTIONS ON AUDIO

We hypothesize that smart speakers generate higher engagement scores than mobile or desktop because of the interactive component these devices offer. Our brains are wired to activate when communicating with others⁵, and our research indicates streaming music by vocalizing the request to smart speakers activates a similar function. Our research supports this hypothesis, as a majority of respondents reported that talking to a voice assistant on a smart speaker feels like talking to a friend, and generates a sense of human contact.


Sound bite:
Streaming audio has the power to alter our moods, and most commonly makes us feel happy, joyful, optimistic, and confident. In our research, participants experienced streaming audio ads as more engaging than similar ads on radio and linear TV. They found streaming audio more engaging when they could request it by voice using voice-assisted smart speakers.

Amazon audio tip:
Connect with your audiences in moments that matter, when they’re feeling positive and confident. Work with Amazon Ads to build a connected home strategy to improve engagement with your message by delivering reach and frequency over smart speakers on the Amazon Music ad-supported tier. Collaborate with Wondery on custom messaging via branded segments within podcasts.
Your brand on smart speakers:
How and why brands thrive with new audio technology

Let’s explore how consumer engagement levels translated to positive impact for brands.
Ad perception
Participants reported a more favorable perception of streaming audio ads when they heard the ad through ad-supported content on a smart speaker compared to other devices. For example, participants were +1.3x more likely to report an ad was relevant to them if they heard the ad in ad-supported content on a smart speaker than if they heard the same ad on desktop.

Ad Perception by Device Index
Audio ads delivered through smart speakers on ad-supported audio content are viewed more favorably than the same ads delivered on mobile or desktop.

Participants also reported a closer emotional connection to brand messages delivered in ad-supported audio content on smart speakers.

- 75% Reported they enjoy listening to ad-supported content on smart speakers more than ads delivered on other media channels or devices.
- 73% Reported they feel a closer emotional connection to ads delivered through ad-supported content on smart speakers than ads delivered on other media channels or devices.
In our research, there was a moderately strong correlation (.62) between participants who reported positive sentiment toward hearing streaming audio ads on smart speakers, and their brand scores on metrics such as awareness and purchase intent.

**Brand perception**
Brand perception was also impacted by which device delivered the brand message. Brands who deliver their message through premium, ad-supported content on smart speakers are viewed as innovative and higher quality than brands that do not.

Agreed brands who advertise on smart speakers using ad-supported audio content are innovative.

Agreed brands who advertise on smart speakers using ad-supported audio content are higher quality than those that do not advertise on smart speakers.

**Full-Funnel Ad Effectiveness**
Audio ads delivered through ad-supported content on smart speakers generated greater ad effectiveness in all stages of the purchase funnel compared to the same ads delivered through other devices. Ad recall is often one of the first steps in a consumer journey. Ad recall on streaming audio outperformed benchmarks for broadcast radio and linear TV.

**Ad Recall Index by Media Channel and Device**
Streaming audio on smart speakers deliver highest ad recall of all channels or devices. Ads delivered through ad-supported audio content on smart speakers generated 1.3x brand recall compared to broadcast radio and linear TV benchmarks.

- Broadcast radio ad recall benchmark: 76
- Linear TV ad recall benchmark: 78
- Streaming audio ad recall index on desktop/laptop: 84
- Streaming audio ad recall index on mobile: 95
- Streaming audio ad recall index on smart speaker: 100
In addition to greater ad recall, streaming audio ads delivered on smart speakers outperformed the same ads delivered on other devices in brand awareness, favorability, and purchase intent.

Ad Effectiveness Index by Streaming Audio Device
Smart speakers generated greater ad effectiveness than mobile and desktop across the purchase funnel.

<table>
<thead>
<tr>
<th>Brand Awareness (Aided)</th>
<th>Desktop/Laptop</th>
<th>Smart Speaker</th>
<th>Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>100</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Brand Favorability</td>
<td>88</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
<td>Purchase Intent</td>
<td>74</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

There was a strong correlation between biometric engagement score and the effectiveness of audio ads on brand metrics. In fact, our research identified that approximately 30% of the combined impact of recall, awareness, favorability, and purchase intent for the ads included in our study was attributable to emotional engagement in the one-minute leading up to the commercial break.

Engagement with streaming audio content accounted for approximately 30% of the combined impact on ad recall, awareness, favorability, and consideration.
YOUR BRAND ON SMART SPEAKERS

Streaming audio ads with Alexa CTAs

With the emergence of voice assistants, consumers can now have a two-way dialogue with their favorite brands. Alexa CTAs include asking your smart speaker for Amazon actions such as adding an item to cart, requesting more information, or setting a reminder. Our research found that ads with Alexa CTAs outperformed ads without on brand awareness, purchase intent, and positive brand attributes.

+1.1x Ads with Alexa CTAs scored +1.1x greater brand awareness than ads without Alexa CTAs.

+1.1x Ads with Alexa CTAs scored +1.1x greater purchase intent on average than ads without Alexa CTAs.

+1.3x Participants were +1.3x more likely to report brands as “high quality” when the ad included Alexa CTAs.

+1.1x Participants were +1.1x more likely to report brands as “a leader in its space” when the ad included Alexa CTAs.

+1.1x Participants were +1.1x more likely to report brands as “innovative” when the ad included Alexa CTAs.

+1.2x Participants were +1.2x more likely to report brands as “for me” when the ad included Alexa CTAs.
YOUR BRAND ON SMART SPEAKERS

We measured streaming audio ads with Alexa CTAs in three industries: CPG, retail, and financial services. In all three of the industries, we found greater emotional engagement and brand scores in ads with Alexa CTAs vs no Alexa CTAs in the same category.

Greater emotional engagement for CPG ads with Alexa CTAs vs. CPG ads without Alexa CTAs.

+1.6x

Greater emotional engagement for retail ads with Alexa CTAs vs. retail ads without Alexa CTAs.

+1.4x

Greater brand awareness reported for financial services ads with Alexa CTAs vs. financial services ads without Alexa CTAs.

+1.3x

Greater purchase intent reported for financial services ads with Alexa CTAs vs. financial services ads without Alexa CTAs.

+1.1x

Greater ad relevance reported for financial services ads with Alexa CTAs vs. financial services ads without Alexa CTA.

+1.1x

Sound bite:

Reaching audiences with streaming audio through ad-supported content on smart speakers can improve perception of brands and their messages. Smart speaker ads generated higher scores across the purchase funnel than the same ads delivered through other devices. Streaming audio ads with Alexa CTAs were more impactful than ads without Alexa CTAs in brand awareness, positive ad perception, and purchase intent. Our research confirmed CPG, financial services, and retail brands all perform stronger with voice-interactive ads.

Amazon audio tip:

Start a dialogue with your customers by reaching them on smart speakers with streaming audio ads on Wondery and the Amazon Music ad-supported tier. Use audio ads that include an Alexa call to action, allowing listeners to interact with your brand using their voice. They can add products to their shopping cart, set reminders, receive information via email, or drive them to a voice landing page for a customized brand experience.
Match content to context:

The impact of tailoring messaging by music and podcast genre

In an earlier section of this report, we found a majority of participants reported being in a positive mood after listening to streaming audio. In this section, we dive deeper into the array of emotional response driven by different music and podcast genres and advertiser industries. We also highlight the top-performing content genres for each of the ad industries we tested, to help brands reach audiences in relevant moments.
Industry and genre insights
On average, more participants reported feeling happy, joyful, and optimistic after listening to hip-hop, R&B, and Latin music, and Entertainment podcasts. Conversely participants reported feelings of sadness after listening to country music and true crime podcasts.

<table>
<thead>
<tr>
<th>Trust</th>
<th>Happiness, joy, optimism</th>
<th>Confidence</th>
<th>Sadness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock music</td>
<td>Hip-hop music</td>
<td>Latin music</td>
<td>Country music</td>
</tr>
<tr>
<td>Country music</td>
<td>R&amp;B music</td>
<td>Hip-hop music</td>
<td>True crime podcast</td>
</tr>
<tr>
<td>True crime podcast</td>
<td>Entertainment podcast</td>
<td>Family &amp; Kids podcast</td>
<td></td>
</tr>
</tbody>
</table>

Brands may see positive results by delivering their message in music and podcast genres that complement their brand or industry. For example, automotive ads generated +1.8x greater engagement in rock music compared to median engagement for automotive across the other genres. Automotive performed best in entertainment podcasts, +1.2x above median of other genres. In contrast, the CPG category performed best in Family & Kids podcast genres (+1.2x to median), pop, and R&B music (+1.4x to median in both). A map of top-performing genres for each of the tested industries is listed on the following page.
Feel the Story

Wondery’s motto, “Feel the Story”, highlights the impact of emotion and attention through the use of immersive storytelling in their content. Our findings highlight that Wondery podcast content helped listeners feel more engaged and connected with the story than non-Wondery content. For example, our research recorded +1.1x higher physiological engagement in listeners while exposed to Wondery content compared to non-Wondery podcast content in the same genres. This engagement translated to ad effectiveness for brands as well. Ads in Wondery content generated an average of +1.2x higher brand scores across all metrics compared to the same ads delivered in non-Wondery content of the same genre.

Podcasts and music are better together

Streaming music and streaming podcasts had many similarities throughout the study. For instance, engagement for both podcasts and music outperformed engagement norms for radio and linear TV.
In addition, ads delivered through music and podcasts on smart speakers resulted in increased engagement for both podcasts and music. However, music and podcast ads varied in their engagement patterns and ad effectiveness. These differences suggest audio advertisers using both music and podcasts may deliver stronger results by reaching audiences in a variety of emotional states.

**Temporal engagement patterns**
One of the largest differences between podcasts and music was the temporal engagement pattern. Podcast listeners demonstrated a variety of emotional responses throughout the listening sessions, which tended to ebb and flow with the content of the storyline. In the example to the right, we see engagement rise as the narrator brings listeners to a cliffhanger. These arcs were common among podcast listening sessions.

In contrast, temporal engagement patterns for music were more horizontal. Music listeners had a similar level of emotional engagement throughout the playlist and listening sessions with fewer and less intense engagement arcs.

**Example of a podcast cliffhanger moment**
Podcast content generates high variability in emotional engagement
Ad effectiveness
Both podcasts and music scored strongly on ad effectiveness metrics such as ad recall, ad trust, brand awareness, favorability, and purchase intent. However, podcasts and music tended to have different levels of impact for different metrics. While podcasts still drove strong performance on brand awareness and ad recall, podcasts performed even stronger than music in driving purchase intent and ad trust. Conversely, while music can drive positive purchase intent and trust, ads played in music tended to perform even stronger than podcasts in ad recall, brand recall, and favorability.

Forecasting the future of podcasts
We are likely to see significant evolution of podcast technology in the coming decade. For example, podcasting will likely improve its contextual learning capabilities to reach audiences who are listening to podcast content that is contextually relevant to a brand. Creative optimization is also likely to gain traction for podcast advertising in the future. These forecasts suggest future research on podcast engagement will continue to generate new insights for brands and consumers.
Sound bite:

Reaching audiences with the right message in the right content and context can lead to greater engagement with your ad and a more positive brand perception. Wondery content delivered higher engagement with ad content than non-Wondery content in the same genre. Music ads created consistent engagement patterns, and were more likely to improve ad recall, brand awareness, and brand favorability. In contrast, podcasts created more variable engagement patterns with cliffhanger moments, and were more likely to improve purchase intent and ad trust. **Using both podcast and music together may help brands succeed at all stages of the purchase funnel, and reach audiences in a variety of mood states.**

Amazon audio tip:

Work with your Amazon audio ads account team to help you select the right genre context for your brand. Work with Wondery to deliver your message in premium podcast content. Select your streaming audio media mix based on campaign objectives. Use a greater mix of music for awareness and recall objectives, and a greater mix of podcasts for campaigns aimed at growing trust and favorability.
Harnessing the science of sound to build your brand:

Five recommendations for using audio to engage and connect with consumers
We’ve summarized the results of this research into five actionable recommendations for brands.

1. Use streaming audio to reach and connect with audiences in highly engaged moments.
   Our research uncovered higher engagement with streaming audio than broadcast radio and linear TV. We found streaming audio often had a positive impact on mood, and that positive engagement correlated with significant results for brands.

2. Reach consumers in the connected home to improve engagement and recall of your message.
   Ads delivered through ad-supported content on smart speakers scored higher in engagement and brand impact than the same ads delivered on mobile or desktop/laptop. Brands who advertise through ad-supported content on smart speakers were more likely to be seen as innovative and high quality than brands that do not.

3. Start a dialogue with your audience using audio ads with Alexa CTAs.
   Streaming audio ads with Alexa CTAs consistently outperformed ads without Alexa CTAs. Brands that leverage this capability to start a dialogue with their audiences may be more likely to grow brand awareness, purchase intent, and ad relevance.

4. Consider the fit between audio context and your industry to improve ad relevance.
   Brands may improve ad relevance and performance by considering which podcast and music genres are a good fit for their brand, product, or industry.

5. Use music and podcasts together to drive different metrics across the consumer funnel.
   Our research found podcasts and music drove different types of engagement, and improved different brand metrics. Brands that use a combination of both podcast and music may be more likely to reach audiences in a variety of mood states, and are more likely to move consumers through all stages of the purchase funnel.
Conclusion:
How to harness the science of sound to build your brand and connect with consumers.
CHAPTER VI

Conclusion

Our objective with this research was to understand the science behind brand building with audio, and help brands harness those insights to build meaningful connections with consumers. In the process, we uncovered that streaming audio can elicit an array of emotional experiences, and even has the power to change our mood from negative to positive. We’ve learned streaming audio is more emotionally engaging than linear television or broadcast radio. We also learned that ads delivered through ad-supported audio content on smart speakers generate even higher engagement than the same content delivered on other devices.

At Amazon Ads and Wondery, we continue to innovate on behalf of our customers and listeners. We are obsessed with using insights to help brands and consumers build meaningful connections with one another. The following checklist may help brands use the science of audio to begin a dialogue with build meaningful connections with consumers.

- Learn about the science of brand building with audio
- Reach your audiences on smart speakers using ad-supported audio content
- Start a dialogue with your audiences using audio ads with voice-interactivity
- Align your brand message with the music and podcast genres most likely to engage your audiences
- Deliver contextually relevant content based on the emotional content of your message and industry to improve impact and relevance

For more information, please reach out to your Amazon Ads or Wondery Account Executive.
Appendix
Appendix: glossary of terms

**Genres:**
The genre of podcast or music as categorized by Wondery and Amazon Ads. Podcast genres tested include: true crime, entertainment, and family & kids. Music genres tested include: rock, pop, hip-hop, R&B, country, and Latin.

**Industries:**
The industry of the advertiser included in the ad content. The following industries are represented in this study: automotive, CPG, entertainment/tune-in, financial services, and retail.

**Streaming audio:**
The sum of results from Amazon Music, Wondery podcast, and non-Wondery podcast listening sessions.

**Broadcast radio:**
Music and spoken word audio content delivered through AM/FM terrestrial radio signals. Used in reference to MindProber’s benchmarking database of broadcast radio content and ads.

**Linear TV:**
Video delivered on a large screen through traditional linear or broadcast channels, not including streaming or online video. Used in reference to MindProber’s benchmarking database of linear TV content and ads.

**Mobile:**
Music and podcast content consumed on a mobile phone or tablet using participants’ choice of either headphones or speaker.

**Desktop:**
Music and podcast content consumed on a desktop or laptop device using participants’ choice of either headphones or speaker.

**Smart speaker:**
Music and podcast content consumed on smart speakers.