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Consumer Survey 2022

The Vehicle as Third Space

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Gen Z



Millennials



Gen X



Baby Boomers

This report, commissioned by DTS, presents the findings of an Online CARAVAN® survey conducted among 844 U.S. adults who currently own or lease a vehicle. The survey was fielded August 26-28, 2022.

Throughout this report, results are analyzed in total as well as by gender, generation, and the presence of children under age 18 in the household where statistically significant differences exist at a 95% confidence level. Generations are defined as Gen Z, ages 18-25 (N=98); Millennials, ages 26-41 (N=278); Gen X, ages 42-57 (N=198); and Baby Boomers, ages 58-76 (N=252).

The margin of error for the total sample of 844 adults is +/- 3.4 percentage points at a 95% confidence level.

One in Three Consider Their Personal Vehicle More Important Today vs. Pre-COVID

One-third (34%) of drivers feel their personal vehicle is more important to them today versus pre-COVID, while 63% report no change in their perception of their vehicle's importance. Just 3% state their vehicle is less important.

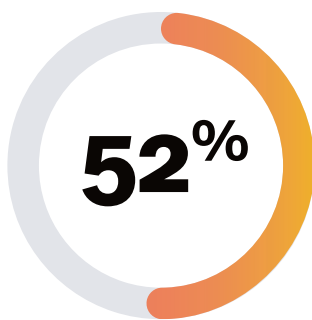
Gen Z (54%) and Millennials (49%) are far more likely than Gen X (31%), and especially Baby Boomers (18%), to say their vehicle is more important to them now than before COVID. This is also true of nearly half (48%) of consumers with children in their household versus just 27% of those with no children.



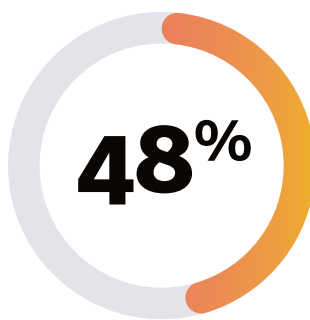
“Third Space” is Top Reason for Increased Importance of the Personal Vehicle

Among those who consider their vehicle more important today versus pre-COVID, the top reason cited is it offers a space outside of work and the house to relax, enjoy hobbies, escape stress, etc. (52%); in other words, a third space. Nearly as many (48%) say they are no longer comfortable with public transportation or ride-sharing, while two in five (41%) feel it offers a place of refuge during these challenging times.

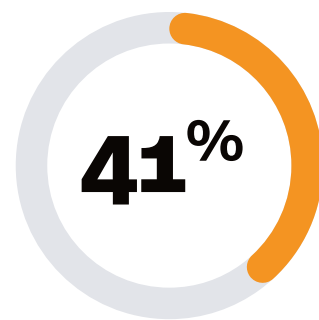
Reasons why your personal vehicle is more important to you today versus pre-COVID.



It Offers a Space Outside of Work and the House to Relax, Enjoy Hobbies, Escape Stress, Etc.



No Longer Comfortable with Public Transportation or Ride-Sharing



It Offers a Place of Refuge During These Challenging Times

Perceptions of their vehicle as a “third space” are particularly prevalent among Millennials (58%) who view their vehicle with greater importance now versus pre-COVID.

75%

of Gen Z

report a heightened perception of the
**VEHICLE AS A
THIRD SPACE**
versus pre-COVID.



One in Two Drivers View the Vehicle as a Third Space More So Today vs. Pre-COVID

Half (49%) of drivers think of their vehicle as a third space more so today than they did pre-COVID, with Gen Z (75%) and Millennials (65%) significantly more likely than Gen X (44%) and Baby Boomers (30%) to report a heightened perception of their vehicle as a third space versus pre-COVID. Respondents were told a first space is usually where they live, their home; a second space is their workplace; and the third space is a place outside of work and the house, a place to relax, enjoy hobbies, escape the stresses of work – a coffee shop, library, park... or their vehicle.

Three in five (60%) respondents with children in the household express this same view of their vehicle, compared to 43% of those with no children.

The survey offers evidence that this interest continues to grow, especially as many feel the pandemic has blurred the lines between work and home space: **21% of drivers say their interest in viewing their vehicle as a third space has increased in just the last year.**

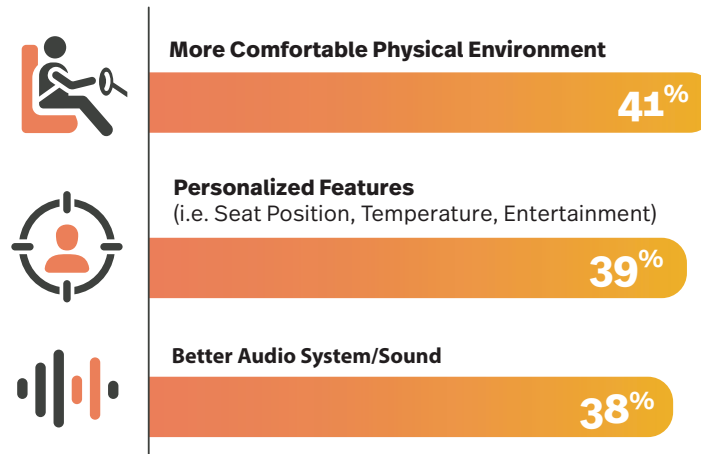
Self-Driving Cars Would Increase Perception / Use of Vehicle as Third Space

Among those who do **not** think of their vehicle as a third space more so today than pre-COVID, roughly one in three (32%) say they would be more likely to think of/use their vehicle as a third space if it was completely self-driving.

This number jumps to 50% among Millennials, significantly higher than the 32% of Gen X and 22% of Baby Boomers who feel the same. Additionally, those with children in the household (42%) are much more inclined than those with no children (28%) to believe their perception/usage of their vehicle as a third space would increase if their vehicle was self-driving.

Physical Comfort and Personalized Features Top List of Desired Enhancements to the Vehicle as a Third Space

Top Three Ways Drivers Would Like Vehicle as Third Space Enhanced



Thinking of ways to enhance their vehicle as a third space, drivers would most like their vehicle to offer a more comfortable physical environment (41%); automatically understand their seat position, temperature, lighting and entertainment choices when they enter the vehicle (39%); and possess an even better audio system/sound (38%).



Additionally, one in four (25%) would like the radio in-dash experience to be more robust, immersive, visual and informative. Nearly as many (21%) would like their entertainment choices to be as robust in the dashboard as they are on their home devices.

Nearly one-third of Millennials (30%) and Gen Xers (29%) express a desire for a more robust, immersive, visual and informative radio in-dash experience, compared to just 18% of Gen Z and 20% of Baby Boomers.

Millennials and Gen Xers (both 26%) are also the most likely – particularly compared to Baby Boomers (13%) – to want entertainment choices that are as robust in the dashboard as they are on their home devices.

69%

of drivers want their vehicle to “know” them and **personalize everything like music, lighting, and temperature.**



Advanced Personalization Is Important to Seven in Ten Drivers

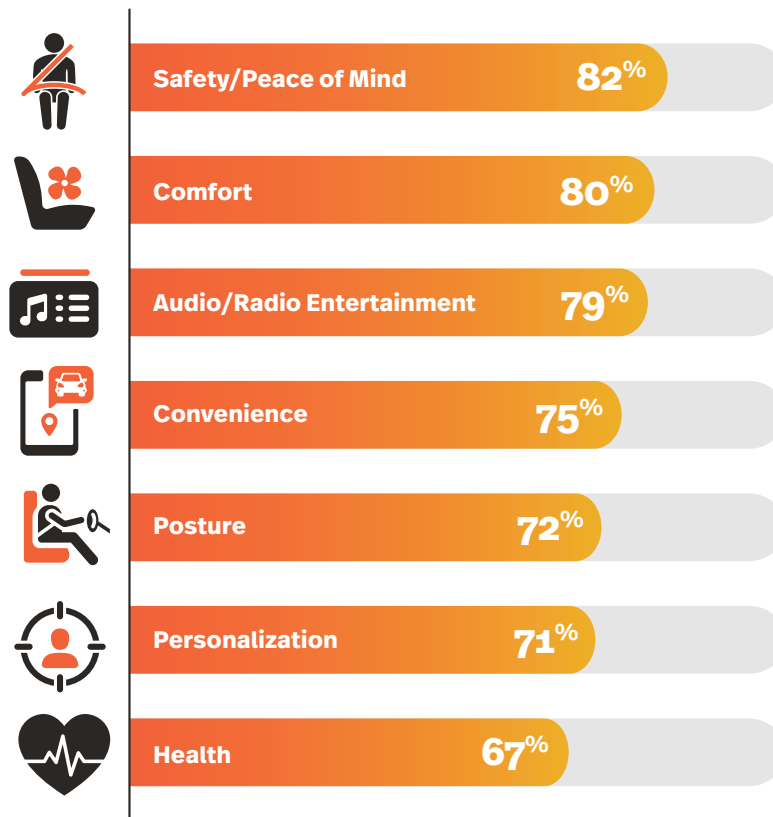
As described to respondents, advanced personalization means your vehicle not only “knows” you and your occupants, but it can adjust and personalize everything from music choices to lighting and temperature. It can understand the time of day, if kids are in the car, etc., so it can provide the most appropriate infotainment and environment.

For 69% of drivers, advanced personalization (context awareness) is very or somewhat important to them in enhancing the third space/in-cabin experience. The younger the generation, the higher the importance of advanced personalization, with Gen Z (89%) and Millennials (83%) significantly more likely than Gen X (65%) and Baby Boomers (55%) to consider it an important enhancement to their vehicle. Very/somewhat important ratings are also more prevalent among those with children in the household (82%) versus those with no children (62%).

Safety, Comfort, and Audio Entertainment: Third Space Areas of Design Eliciting Highest Interest Among Drivers

Respondents were presented with a list of 13 “third space” potential areas of design and asked to rate their interest in each, with an assurance that the features assume a design that preserves individual privacy and sensing to guarantee safety. The features garnering the highest interest levels (i.e., ratings of “very” or “somewhat” interested) were **Safety/Peace of Mind** – *senses and then alerts driver about pet/child/object left behind* (82%); **Comfort** – *more of the home lounge experience, seats with massagers that can sense tension and automatically adjust* (80%); and **Audio/Radio Entertainment** – *robust easily discoverable music and content, with high quality audio and supported by metadata such as artist and song information, related info, related stations, lyrics, and more* (79%).

What is your interest level in the following potential areas of design? Please note the features assume a design that preserves individual privacy and sensing to assure safety. Chart shows very/somewhat interested responses.

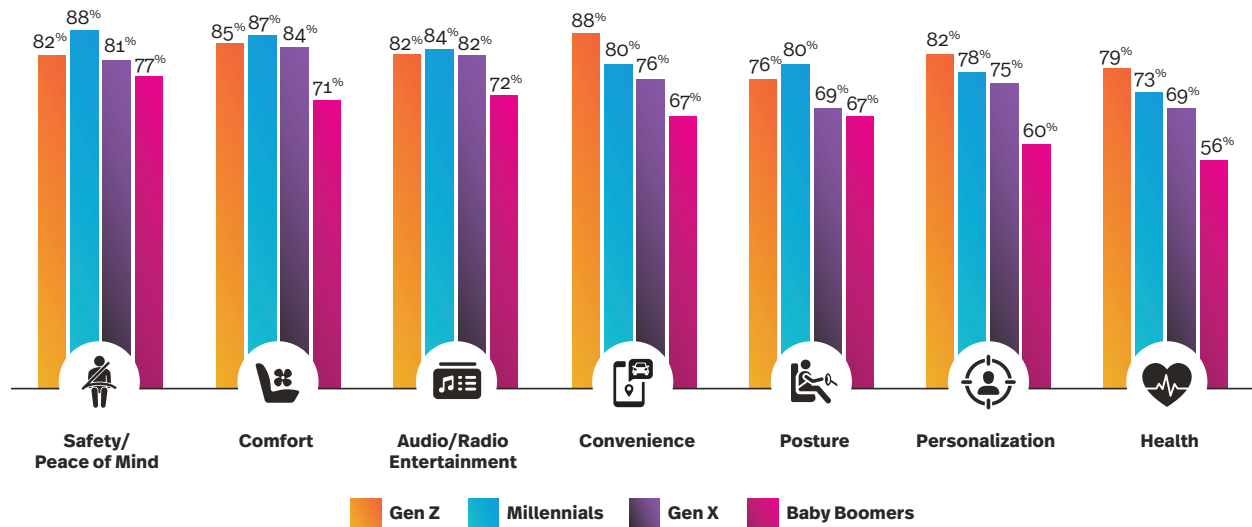


Additionally, at least seven in ten drivers expressed interest in the following “third space” features: **Convenience** – parking, toll payments, traffic updates accessed via dashboard/voice activation (75%); **Posture** – sensors that can sense and then alert you to bad posture, and encourage postures that can increase comfort and alertness (72%); and **Personalization** – infotainment, cabin environment, etc. automatically adjust to your preferences and emotions (71%). And two-thirds (67%) of respondents are interested in design features relating to **Health** – sensors that can assess health, from heart rate to respiratory rate to facial changes that could indicate illness.

Men and women express similar interest levels with respect to all of these features except **Health**, which is more appealing to men (70%) than women (63%).

Across generations, Gen Z and Millennials consistently demonstrate higher interest for these “third space” features, although interest among Gen X is at a comparable level when it comes to **Safety/Peace of Mind**; **Comfort**; and **Audio/Radio Entertainment**. Across the board, Baby Boomers are the **least** likely to say they are interested in these potential areas of design.

Third Space Areas of Design: % Interested



With respect to all seven features, respondents with children in their household are significantly more inclined than those with no children to state they are very/somewhat interested in each: **Safety/Peace of Mind** (85% vs. 79%); **Comfort** (89% vs. 75%); **Audio/Radio Entertainment** (88% vs. 74%); **Convenience** (84% vs. 69%); **Posture** (79% vs. 67%); **Personalization** (78% vs. 67%); and **Health** (74% vs. 62%).

Over Two-Thirds Interested in the Vehicle as a Health/Diagnostic Space

As tele-health becomes key to health care, smart chair technology is being piloted that can measure a person's heart and respiration by simply sitting in it; computer-vision technology is being developed that can detect, from facial changes, specific health issues; and sensors already exist to detect electrical energy/heat the skin is generating. These technologies have the potential to exist in a vehicle, such as in the steering wheel, through in-seat sensors and computer vision technology.

Assuming these technologies have the capacity to ensure privacy and safety, 69% of drivers would be very or somewhat interested in utilizing their vehicle as a health/diagnostic space that can contribute to their wellness by detecting health issues.

Interest levels skew higher for Gen Z (81%), Millennials (78%), and Gen X (72%) as opposed to Baby Boomers (55%).



69%

of drivers would be interested in utilizing their vehicle as a health/diagnostic space.

91%

of Gen Zers & Millennials

are interested in audio content that automatically adjusts to improve their mood.



Potential Interest Runs High in Mood-Sensing Technology that Adjusts Audio Content

As explained to respondents, audio is an “always on” sense, in real time in our brain, even when we sleep. The correct audio/music has been shown to have a positive impact on mood/state-of-mind/stress levels – even on health.

Given this, four in five drivers stated they are interested (38%) or may be interested (42%) in an in-cabin feature that could sense their mood and adjust the audio content to improve it.

Nine in ten Gen Zers and Millennials (both 91%) express a potential interest in such a feature, significantly higher than the 76% of Gen Xers and 68% of Baby Boomers who feel the same. Additionally, over half of Gen Z (59%) and Millennials (53%) answered a definitive “yes” when asked if they would be interested.

Sound Baths, Mood-Altering Music Appeal to Majority

Drivers who expressed a potential interest in mood-sensing technology that could adjust the audio content to improve their mood were then asked to rate their interest in three specific audio features. Over three in four respondents described themselves as very or somewhat interested in each of the following:



Sound bath: Feature that produces sounds and frequencies proven to lower blood pressure, relieve stress, fatigue, and depression symptoms, activated by their sensed mood (83%)



Mood Altering Music: Feature that adjusts music depending on what is detected about their mind/state-of-mind, i.e., calming music if they are stressed, or revved up music if they are drowsy (82%)



Experiences: Feature that allows them to ask for experiences such as a fun-drive-with-the-kids/friends, adaptively altering carpool karaoke, or mindfulness (music/sounds that stimulate the brain) (77%)

Millennials are the most inclined of all generations to express an interest in a feature that adjusts music depending on their mood (89%) and a feature that allows them to request experiences (also 89%). Not surprisingly, the latter feature also appeals to 87% of respondents with children in the household, versus 69% of those with no children.

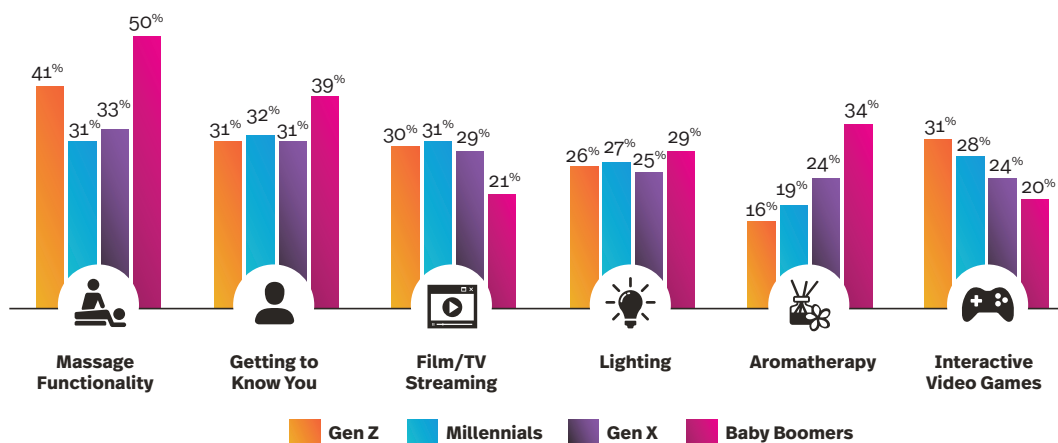
Massage Functionality, “Getting to Know You” Enhancements Rank Highest



Of Baby Boomers ranked **Massage Functionality** as their top enhancement, while **38% of all drivers** also ranked it first.

Respondents were presented with a list of 12 personalization features that could enhance their vehicle as a third space and asked to rank them in order of interest. When viewed by “top 3” responses, **Massage functionality** (38%) garnered the highest interest, described as a feature in driver/passenger seats that energizes or soothes depending on detected mood. Following closely behind, and ranked among their top 3 features by 34% of drivers, is **Getting to Know You** – the more you use the vehicle and features, the more it learns about you to better adjust to your needs. Other features earning a top 3 ranking from at least one in four respondents include the following: **Film/TV streaming** (28%); **Lighting** – cabin lighting that changes color/intensity according to mood (27%); **Aromatherapy** – vehicle releases aromas shown to help calm or stimulate or spur creativity depending on mood (25%); and **Interactive video games** (25%).

Third Space Personalization Features: % Ranking in Top 3



Women are far more inclined than men to rank **Massage functionality** (46% vs. 31%) and **Aromatherapy** (31% vs. 20%) as a top 3 feature of interest to them.

Among generations, half (50%) of Baby Boomers consider **Massage functionality** a top 3 feature of interest, significantly higher than both Millennials (31%) and Gen X (33%). Similarly, Baby Boomers (34%) are much more likely than all other generations – Gen Z (16%), Millennials (19%), and Gen X (24%) – to rank **Aromatherapy** among their top 3 choices. The opposite is true when it comes to **Film/TV streaming** and **Interactive video games**, both of which hold greater appeal for younger generations versus Baby Boomers according to top 3 rankings.

The Future Looks Bright for the Vehicle as a Third Space

The COVID-19 pandemic has had wide-ranging effects on people's perceptions of their work life, their physical and mental well-being, and even their personal vehicle, as evidenced by the fact that one in two drivers view their vehicle as a third space more so today than pre-COVID. Along with this changing perception comes an increased desire for smart, intuitive technology that provides **safety/peace of mind, comfort**, and a highly **personalized** driving experience – including mood-sensing technology that can adjust audio content and offer massage functionality and aromatherapy to energize or soothe. Perhaps because of the renewed focus on physical wellness in recent years, interest also runs high in advanced sensing features that would transform the vehicle into a medical diagnostic tool. In short, there is a clear interest for a more immersive, customized experience among drivers, suggesting exciting new possibilities for the future of the vehicle as a third space and for the automotive industry: Automotive has conquered the vehicle exterior, but the next evolution is all about solving the vehicle interior, especially its role as a third space.



About DTS, Inc.

Since 1993, DTS has been dedicated to making the world sound better. Through its pioneering audio solutions for mobile devices, home theater systems, cinema and beyond, DTS provides incredibly high-quality, immersive and engaging audio experiences to listeners everywhere. Now, DTS is also powering imaging and sensing technologies as well. For more information, please visit www.dts.com.

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