EXPERIENCES PER MILE:

Creating the First EPM Index
for the Automotive Industry

Experiences
Per Mile
Advisory Council

Preface

The automotive industry has made significant strides in the movement toward offering enhanced Experiences Per Mile over the past several years. The vehicle's value once measured by its mechanical performance, exterior styling and driving dynamics has now changed, and it's very visible to automotive industry "insiders." As consumers ambitiously strive for new ways to connect to their world, both in and outside their vehicles, it's no surprise that the way a consumer measures a car's worth is starting to move toward the experiences provided by a vehicle.

New vehicle buyers are seeking new connected experiences with the technology provided inside their vehicle.

This is in contrast to consumers shopping for vehicles with the highest engine horsepower, closest cornering capabilities or even the most attractive brand name. As the shift from RPM (Revolutions Per Minute) to EPM (Experiences Per Mile) continues to evolve, the automotive industry must find new ways to adapt to this change or risk being left behind.

There is a need to shape the future of personal mobility by shifting away from evaluating the speed, paint color and cornering capabilities to consumer-centric mobility experiences. The future of mobility lies in redefining what "moves consumers" emotionally instead of exclusively on what "services and features are offered."

As such, this report summarizes an exploratory research study that was conducted by IPSOS on behalf of the EPM Advisory Council to explore whether creating a new experience-based metric for the Automotive industry is possible. Current measurements focus on satisfaction and quality of the features and functions inside the vehicle. The goal was to create an alternative and actionable metric to measure a vehicle based on its ability to provide the consumer with more fulfilling Experiences Per Mile.

Top-line Findings

The first key finding is that consumers have goals that vary by trip type. Consumers are already thinking about various types of journeys and how the vehicle needs to be flexible enough to accommodate their differing needs during journeys. In fact, the research showed that the accomplishment or fulfillment of trip goals is crucial to their overall trip rating.

A second key discovery was that the development of an EPM Index that differentiates across trip types and vehicle make/models looks feasible. This kind of metric would provide an important way to compare individual vehicle models based on how well they help consumers meet their various trip needs. Imagine a day when a consumer could shop online or at the dealership lot and review the vehicles with the highest EPM Index for "Excursions." This may be appealing to consumers that enjoy traveling on the open road for vacations with family and/or friends.

A third finding is that the use of in-car technology tends to help consumers meet their various trip goals, leading to higher ratings and EPM Indices. Manufacturers or Dealers who focus on encouraging or training their owners to use the tech features in the purchased vehicle, can potentially influence the EPM Index positively (in other words, improve the ownership experience). By analyzing the impact of individual tech features on an EPM Index, it is possible to identify those features that are most-or-least effective in helping consumers reach their trip goals.

A complete list of top-line findings are located to the right. The detailed findings will be highlighted throughout the rest of this report.

What We Know

1. **Consumers can distinguish** the important goals they have by trip type.
2. **Signs are good for developing an EPM Index** that differentiates across trip types and vehicle makes/models.
3. Consumers who **use more tech features** tend to have **higher EPM scores.**
4. The **accomplishment (fulfillment) of goals drives the overall rating** of their trips.
5. Through fulfillment of trip goals:
   - Errands and Transporting Others have the highest EPM Index.
   - Commutes and Excursions have the lowest EPM Index.
6. Premium and Mainstream EPM results are not that different but **models within each category do vary.**

Key trip goals included in the Automotive EPM Index

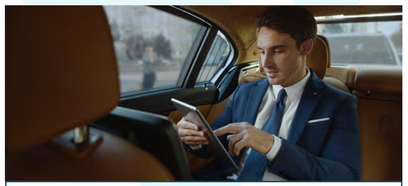
Being Productive

Connecting & Communicating

Feeling Good
(Physically & Mentally)

De-stressing/Relaxing

Entertaining
(Myself & Others)



Finding Privacy

Meeting a Trip's Goal(s) Results in a Higher EPM Index

The EPM Advisory Council Defined

The EPM Advisory Council was formed to encourage collaboration among an exclusive group of mobility executives, analysts and industry insiders regarding the changing value chains in automotive being driven by the connected movement. Membership is open to individuals from companies that are part of the larger ecosystem and that are interested in contributing to our overall goals. Listed below are the definition of Experiences Per Mile, and the overall vision for an EPM Index.

What are Experiences per Mile (EPM)?

Experiences per Mile are hyper-individualized experiences that solve for real consumer needs to help people maximize the time they spend in the vehicle.

What is the Vision for an EPM Metric?

Create an Experiences Per Mile metric that is simple enough for consumers to understand and actionable enough for companies to leverage, while differentiating based on models or services.

"To build a sustainable business for the long term, Nissan continuously adapts to changing customer expectations and delivers new customer experiences that meet those expectations. The EPM Index came from the Experiences Per Mile Advisory Council's desire to measure the in-vehicle customer experience relative to the customer's key trip-goals. This metric measures the personal experience of the consumer based on how the vehicle accomplishes these goals seamlessly and with ease. With further evolution of the EPM Index, Experiences Per Mile may become a key foundation of an industry-wide focus on delivering a seamless customer experience in all areas."

Dan Mohnke, *Nissan NA*

Industry at an Experience Crossroads

Electric Vehicle Ownership

While the previous two years have seen a pandemic, a war and massive supply chain disruptions, nothing has slowed innovation of the mobility industry and automakers. The pace and vision for electrification, autonomous ambition and digitization have all accelerated, yet these advancements have raised both challenges and opportunities for delivering a world class end-to-end consumer experience. This not only includes elevating the consumer's time spent in the car, but also the increasingly complex ecosystems these vehicles and services must successfully operate in.

Unfortunately, advancements in the corresponding measurement of the consumer experience have failed to keep pace.

Despite numerous industry and environmental challenges, nearly all automakers and governments worldwide have embraced an electrified and more sustainable future. Based on research from SBD Automotive, fully battery electric vehicles made up only 6.6% of global passenger vehicle sales in 2021, but could surpass 20% by 2030 with support from over 3.5 million public fast charger installations.

And it's not just small sedans, but also full-size trucks, off-road vehicles and commercial vans with real-world ranges exceeding 600 miles on a single charge.

As new segments of consumers consider electric, delivering the EV experience promise will define longer-term industry success. Beyond range anxiety, EV satisfaction hinges upon an experience ecosystem of home upgrades, situational charge awareness within the car and when charging remotely, vehicle maintenance and serviceability education, the downstream value of a used battery, charging station availability, interoperability and seamless payments. Time spent while charging the car provides a new experience enabler, too, for drivers to consume content, complete productive tasks, and explore the local environment around them.

"Electrification of vehicles is creating a shift in what consumers expect from their cars. The consumer experience for the Electric Vehicle varies substantially from one with gas powered vehicles. EV owners may suffer from range anxiety, be environmentally concerned, looking for better experiences at charging stations and/or expecting the transition to electric to be seamless. Moreso, we have found that these experiences vary by trip type, vehicle type and more. Monitoring the customer experience for all vehicles will be key to survival for automakers, technology providers, suppliers and more."

Tom Rivers, *HARMAN International*

"The electric vehicle revolution is accelerating. The industry is making large investments around infrastructure, battery technology and vehicle design that will continue to meet consumer expectations. Once a consumer gets behind the wheel of an electric vehicle, they will experience firsthand how easy and fun they are to drive. By the end of 2022, it's anticipated there will be more than 100 electric vehicle offerings. This will provide the optionality consumers demand when selecting an electric vehicle that meets their choice of range, price, styling and functionality."

Stephanie Valdez Streaty, *Cox Automotive*

Industry at an Experience Crossroads

The Autonomous Vehicle & Experience Changes

The second major driver of industry experience is the elusive chase for an autonomous vehicle. Most automotive CEOs have now embraced the difficulty of such a pursuit, and major strides have been made in deploying greater percentages of Advanced Driver Assistance Systems (ADAS), along with the corresponding regulatory framework to safely operate hands-free SAE Level 3 vehicles on public roadways for the first time. Doing so requires an experience shift based on situational awareness and the driver working seamlessly together with the vehicle as one.

Robotaxis, trucking companies and advanced mobility providers are further expanding their advanced autonomy pilot test markets, and even operating limited paid services with no safety driver in the vehicle for the first time—within controlled geo-fenced boundaries. While the autonomous vehicle market will initially grow slowly—only 22,000 annual SAE Level 4 AV sales globally in 2025—providers will see a thirty-fold annual increase by 2030 according to SBD Automotive research.

With safety and trust underpinning the consumer experience (for vehicle occupants and the operating environment at large), recent gains are already giving "time back" to the driver for short secondary tasks. One day fully autonomous vehicles will widely enable experience opportunities for productivity and entertainment, increasing mobility, 24/7 roadway utilization and servicing of expanded segments of the population and many other experiences we have yet to imagine.

Finally, the shift under the broader industry is driven by digitization. Work from home has raised consumer expectations for paperless transactions, at-home vehicle testing, remote maintenance and delivery of cars. It has also disrupted the shopping experience—with a higher focus on safety, time savings and efficiency. New vehicles are not only embracing the driver, but increasingly all occupants, and:

- enabling 'experience zones' via passenger screens;
- offering connected content such as streaming music, gaming and movies;
- providing integration of each passenger's individual digital life into the vehicle.

"The move towards autonomous driving will be a major catalyst for creating new in-vehicle experiences. This year, several major OEMs are taking steps towards L2+ and L3 systems, freeing drivers to take advantage of in-vehicle infotainment (IVI). In addition, ADAS systems like Intelligent Speed Assistance (ISA) will help create new, more precise autopilot features to improve safety and efficiency and enhance the overall driving experience. This is an exciting moment in our industry, and one that will shape the future of how we take part in experiences per mile."

Charity Rumery, *HERE Americas*

"Autonomous vehicles represent an entirely new era of mobility and will have a tremendous impact in shaping the future of transportation. Otonomo is playing an important role in driving innovation for autonomous vehicles through advanced fleet management capabilities of multi-OEM fleets, helping to drive smart EV charging decisions, such as when and where to charge, and providing a deep understanding of the entire rider journey."

Asaf Weisbrot, *Otonomo*

Industry at an Experience Crossroads

Connectivity, Data, OTA & Cybersecurity

As automakers embrace software-defined vehicles, always-on connectivity and over-the-air (OTA) updates, they have promised new business models to enable consumers, for the first time, to purchase physical and software-driven vehicle features and services after the car is sold. Based on SBD Automotive research, nine automotive OEMs already offer some form of "features-as-service" today with nearly every other automaker expected to launch post-sale vehicle features over the next several years.

The consumer expectation is that the car will get better over time and will exchange payments and subscriptions for "unlocking" new capabilities and experiences. Delivering a seamless consumer experience at the optimal value exchange is a new skill for mobility (hardware) providers to become service delivery platform providers that continue to delight customers long after the vehicle is sold.

So, the challenge for the mobility industry and automakers is to continue to accelerate the pace of innovation—without leaving the consumer behind—all while delivering new experiences that exceed expectations. Not an easy task. And as the industry accelerates electrification, automation and digitization, the shared goal of experience measurement will get more complex until the industry embraces collaboration, transparency and the development of an experience metric that is useful for providers to enhance the experience and simple enough for consumers to understand.

"While environmentally sustainable, the proliferation of connected vehicles may create new targets for cybercriminals to exploit like other endpoint devices. Cyber-attackers may incentivize ransom payments to avoid reputational or commercial damage, or attack charging stations to access financial information and personal data. In extreme cases, attackers may even threaten driver safety by breaching vehicles themselves.

Keeping the wheels turning in our more environmentally conscious future is possible by prioritizing cybersecurity. EV drivers should adopt practices to restrict access to private data when connecting devices to their vehicles. Car dealers and manufacturers must also take a more active role in evaluating EVs for vulnerabilities before distribution."

Eloy Avila, *DarkTrace*

"The way we interact with cars is about to be disrupted in a similar way the interaction with phones did in the past few years. Leveraging our digital footprint, the new connected vehicles will proactively suggest actions and contents, based on our cognitive style, enhancing by far today's user experience."

Davide Montosi, *Silk-FAW Automotive Group Italy Srl*

Objectives and Methodology

Objective of the study

This study was constructed to measure and assess "Experiences Per Mile" (EPM) from a consumer's point of view. Participants were asked about their goals for a given trip, how well those goals were met and ultimately their overall rating of the trip. The intent was to evaluate the viability of an EPM Index and to gain knowledge from the study that can be applied to a future EPM measurement or methodology.

The study concept was developed through the collective thoughts and ideas of the Experiences Per Mile Advisory Council, founded in October 2019. At the formation of the council, members began brainstorming on the best way to measure the in-vehicle experience. Meetings were held regularly since its inception. To continue the dialogue, a Metrics Committee was formed in September of 2020 with member companies: HARMAN, SBD Automotive, Nissan, Cox Automotive, AWS and Polaris.

1

Rate experiences based on **discrete trip types**

2

Capture how they felt about **the trip experience**

3

Measure the **impact of technology** on the trip experience rating

4

Prove EPM can be measured and learn lessons from the study that can be applied to a future EPM measurement/ methodology

"While the industry is going through explosive change and technology adoption, the question now becomes are these changes all for the better? Drivers and passengers are the ultimate 'judge and jury' of the next-generation mobility experience and are eager (and willing) to render their verdict. For most, their votes are only counted every 5-6 years when they shop for their next vehicle. If automakers and partners have the ability to enhance the consumer experience on a daily basis, then why wait? Creating an EPM metric at scale can enable a real-time experience feedback loop centered around key trip types and their underlying mobility goals and expectations. Unpacking and testing the key ingredients of an Automotive EPM Index and measuring them is a huge first step in that vision."

Jeffrey Hannah, *SBD Automotive*

Objectives and Methodology

In June 2021, the scope was defined as an Exploratory Study focusing in on the Subcompact SUV market. Because the Metrics Committee felt the experience score may differ by mainstream vehicles versus premium, the survey and the sample were constructed to accommodate analysis of both groups. IPSOS Research was selected to field the research, analyze the results and to work with the EPM Advisory Council Metric Committee on creating a new EPM Index.

The study was designed by asking consumers to rate the most recent experience for a particular journey in their car. The chart to the right outlines the journey to developing an EPM Metric and the attributes that were important aspects of the new metric.

The sample for the study was generated using a random selection of new vehicle owners with the specifications listed to the right.

Owners of 10 Premium Compact SUV Models

2020-2021 Premium Compact SUV Owners

937 Completed Surveys

Audi Q3	BMW X1 | X2	Cadillac XT4	INFINITI QX30 | QX50	JAGUAR E-Pace
LAND ROVER Range Rover Evoque	LEXUS UX	LINCOLN MKC | Corsair	Mercedes-Benz GLA-Class	VOLVO XC40

Owners of 15 Mainstream Compact SUV Models

2020-2021 Mainstream Compact SUV Owners

935 Completed Surveys

BUICK Encore GX | Envision	CHEVROLET Equinox	Ford Bronco Sport | Escape	GMC Terrain	HONDA CR-V | HR-V
HYUNDAI Tucson | Venue	Jeep Cherokee | Compass | Wrangler | Wrangler Unlimited	KIA Seltos | Sportage	mazda CX-30 | CX-5	MINI Countryman
MITSUBISHI MOTORS Eclipse Cross Outlander Sport	NISSAN Kicks | Rogue | Rogue Sport	SUBARU Crosstrek | Forester	TOYOTA C-HR | RAV4	VW Tiguan

**Note: Survey was conducted in January 2022*

Objectives and Methodology

Methodology

A phase one qualitative study was conducted with 12 individuals pulled from the sample of new compact SUV vehicle buyers. Virtual interviews were conducted from which key learnings were taken to finalize the survey for a phase two quantitative study. In phase two, as we mentioned above, participants were sourced from IHS Markit's new vehicle registration records and models were weighted based on total sales for 2020-2021 models amongst all 50 U.S. states. A postal invitation was sent out with a QR code to take the 10-15–minute survey, along with a reminder letter to those who did not complete the survey within two weeks.

Qual | Phase 1:
Individual Interviews

Sept. 2021

Qualitative

Conducted 12 **individual virtual interviews** (IDIs).

Key Learnings:

- Tested & tweaked survey
- Consumers…
  - Struggled to articulate higher order experiences
  - Understood and responded best to rating their functional experiences
  - Probed to learn key parts of the experience that consumers could rate

Quant | Phase 2a:
Pilot of new recruit process + streamlined survey

Dec. 2021

Pilot

Postal invitation mailed to a smaller test group

Tested the **revised survey**: focus on one "most recent" trip per respondent

Validated response in advance of full launch

Key Learnings:

Adjusted survey and format to eliminate drop-outs during full launch

Quant | Phase 2b:
Full Launch
(post Pilot Study)

Jan. 2022

Quantitative

Postal invitation mailed to a larger group

Targeted an **increased # of trip evaluations** ~2,600 (Generated ~2,300 responses)

Key Learnings:

Contained in this report document

Objectives and Methodology

10/2019 — Strategic workstreams to guide how to measure the mobility experience

07/2020 — Creation of **EPM Metrics Committee & Tech. Subcommittee**

01/2021 — Designed as an **"Exploratory Research Study"**

06/2021 — **HARMAN retained IPSOS** to conduct the exploratory study

11/2021 — Designed the survey instrument after qualitative research study completed. Prepared for fielding and pilot study

01/2022 — Fielded the study

06/2022 — Announced Results to Industry

Metrics Guidance

NISSAN · COX AUTOMOTIVE · aws · POLARIS · HARMAN A SAMSUNG COMPANY · SBD

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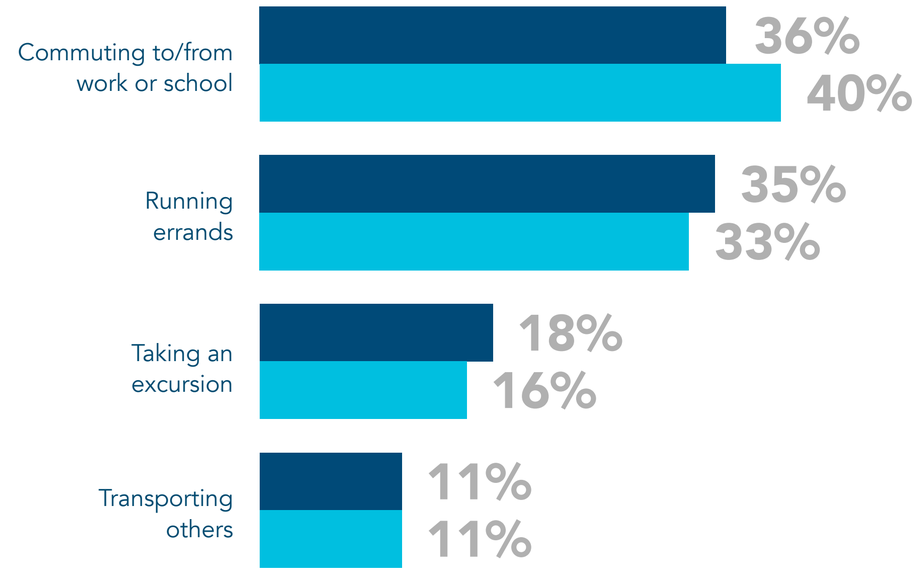
Objectives and Methodology

Objectives

Participants were asked to identify their trips taken in the past two weeks, categorized by trip type, then report details about their most recent trip. Trip types included:

- Commuting to or from Work or School
- Running Errands
- Taking an Excursion
- Transporting Others

Trip Type Mix



Proportion of Trips in Past 2 Weeks - by Trip Type

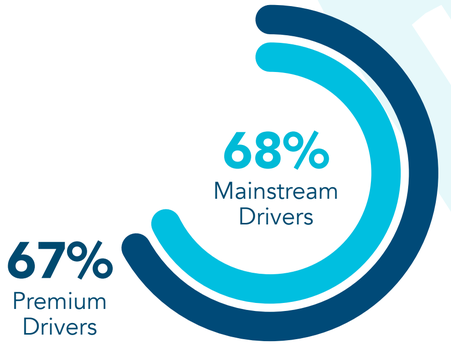
Example: Out of all trips taken in past 2 weeks by Premium Compact SUV drivers, 36% were Commute trips

Premium **Mainstream**

Overall Ratings of Experience

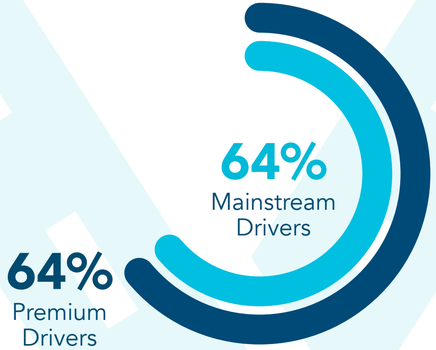
For their most recent trip, participants were also asked to rate the overall trip, as well as their vehicle and its technology. Ratings for both were generally positive and were similar among both mainstream and premium drivers.

Trip Rating



Question: All things considered, **how would you rate this trip**, where a rating of 1 means your trip was poor and a rating of 10 means your trip was excellent?

Vehicle and Its Technology Rating



Question: Aside from getting you from Point A to Point B, **how would you rate your vehicle experience** (including the technology that is in your vehicle) during this trip?

Average total # of trips taken in 2-week period (at time of survey): 20.3

Note: Percentages are net scores = (% 10 + % 9) – (% 1 thru % 6)

Automotive EPM Index

How the Automotive EPM Index Was Created

The Automotive EPM Index was created through strategic workstreams designed to guide the measurement of the mobility experience. The Automotive EPM Index is a score from 0 to 100. The EPM index is comprised of the driver's assessment of how well their goals were accomplished for a given trip as measured by a net score rating. The net score and goal weight are then multiplied to get a weighted net score for each goal, and the sum of the weighted net scores is the EPM Index.

1 Drivers' Experience (Goal Fulfillment) Scores when on a specific trip (Net Score)

2 Goal Importance* for each trip type (Goal Weight)

3 Net Score (1) X Goal Weight (2) = Weighted Net Score for each goal (3)

4 Sum of Weighted Net Scores = EPM Index (4)

The EPM Index is a score from 0 to 100

*Importance derived from how much goal fulfillment predicts Overall Trip Rating (varies by trip type)

Located in the chart below is a step by step example of how an EPM Index is calculated, using the "Commute" trip type. The example lists 6 key goals included in the EPM Index. The more a goal was fulfilled, the better the experience--resulting in a higher overall EPM Index.

1 Calculate the Net Score for each goal
Promoters (% 9 + % 10) minus Detractors (% 1 through 6)

2 Match up Goal Importance Weights by trip type

3 Multiply each Net Score by its unique Goal Weight (varies by trip type)

4 Sum the results

Trip Type: Commute	1	x 2	= 3
Goals	**Net Score**	**Goal Weights** (for Commute)	**Net Score x Weight**
Being Productive	42	14%	5.9
Connecting	54	18%	9.7
Feeling Good	60	21%	12.6
De-stressing/ Relaxing	53	17%	9.0
Entertaining	60	12%	7.2
Finding Privacy	70	19%	12.7
		Commute EPM Score	**57.1**
			Sum of Weighted Net Scores

4

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Automotive EPM Index

Key Experience Goals Vary By Trip Type

The EPM Index is based on a driver's ability to accomplish key experience goals when on a trip. Meeting a trip's goal(s) results in a high EPM Index. The following goals were measured: Being Productive, Connecting & Communicating, Feeling Good (Physically and Mentally), De-stressing/ Relaxing, Entertaining (Myself and Others) and Finding Privacy.

The importance of the six core goals varied by trip type. For example, for Commute trips, Feeling Good had the largest impact on the overall trip rating. Thus, this goal was weighted more heavily when producing an EPM Index for this trip type. For Transporting Others, Feeling Good had a similarly high impact on overall ratings, followed by De-stressing/Relaxing and Entertaining. For Running Errands, De-stressing/Relaxing was the most important goal. For Excursions, Being Productive and Feeling Good emerged as the most important goals.

The EPM Index (scored from 0-100)

The importance of the goals varies by trip type. The EPM Index reflects this.
The combination of Goal Fulfillment ratings X the Goal Importance weights produces the EPM score.

Goal Importance (weight) within each Trip Type

Commutes	Running Errands	Transporting Others	Excursions
21% Feeling Good	20% De-stressing/Relaxing	20% Feeling Good	21% Being Productive
19% Finding Privacy	18% Feeling Good	19% De-stressing/Relaxing	20% Feeling Good
18% Connecting & Communicating	17% Entertaining (Myself & Others)	18% Entertaining (Myself & Others)	18% Connecting & Communicating
17% De-stressing/Relaxing	17% Being Productive	15% Connecting & Communicating	17% De-stressing/Relaxing
14% Being Productive	15% Connecting & Communicating	12% Finding Privacy	16% Entertaining (Myself & Others)
12% Entertaining (Myself & Others)	12% Finding Privacy	17% Being Productive	8% Finding Privacy

Being Productive | **Connecting & Communicating** | **Feeling Good (Physically & Mentally)** | **De-stressing/ Relaxing** | **Entertaining (Myself & Others)** | **Finding Privacy**

Goal Fulfillment Ratings

Automotive EPM Index

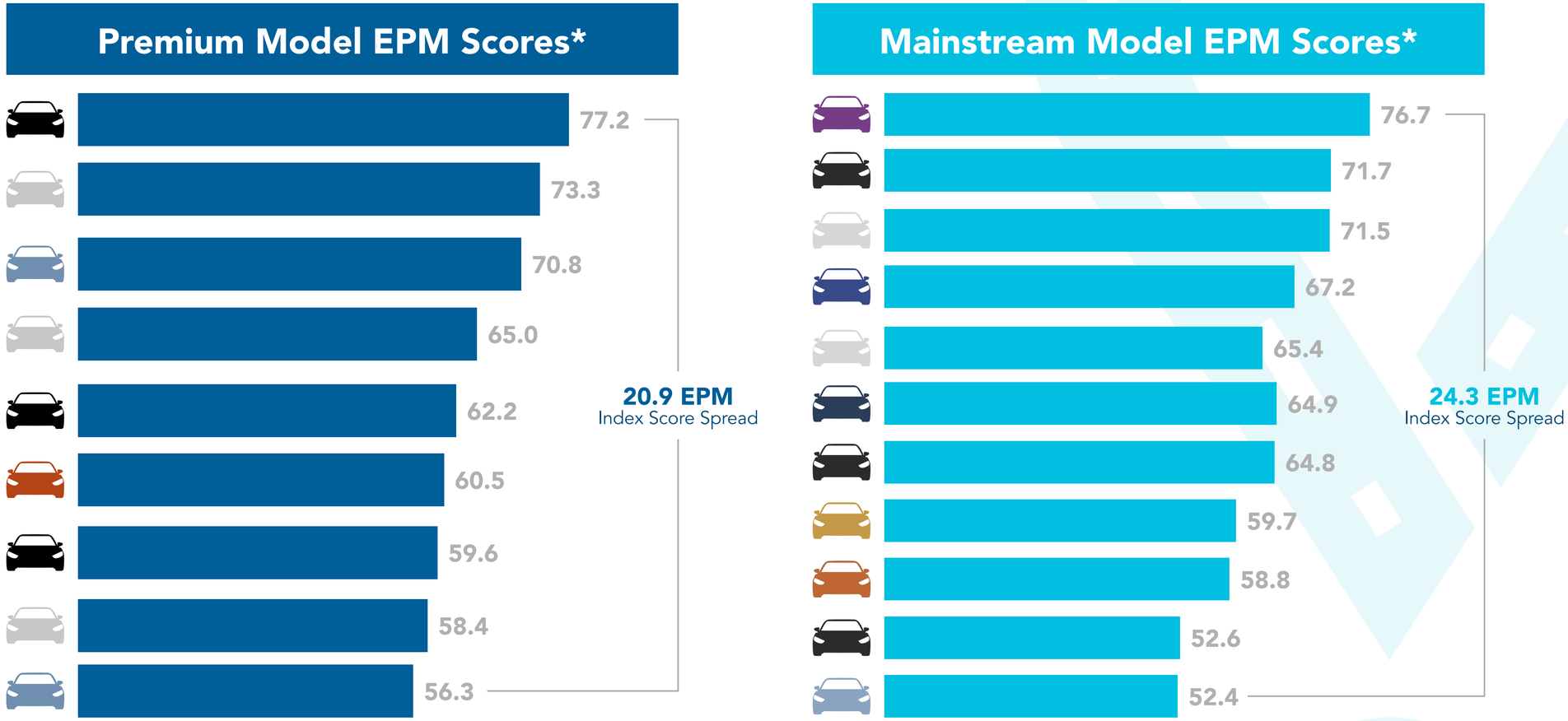
Make and Model

There is a strong indication that the newly created EPM Index can differentiate across individual vehicle models. There was a significant difference in the EPM Indices across the range of models included for premium and mainstream models. Additional diagnostics gathered among a larger sample size would be able to provide more detail such as why specific models have lower EPM scores.

The graphic on the right compares individual models within both categories: Premium and Mainstream. The scores on the right are from actual vehicle models but the names have been redacted. The study showed different areas of weakness for each vehicle along with the impact technology played in driving the EPM Index.

Please note: This chart is based on actual vehicle model data but the names were hidden due to small sample sizes. A larger study would need to take place to verify these findings.

EPM Indices Vary Widely by Vehicle Make/Model for Premium & Mainstream Models

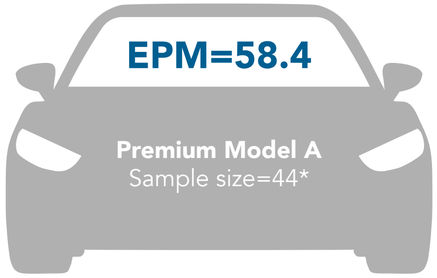
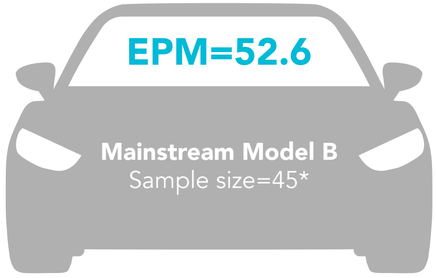


Caution: Small sample sizes

Automotive EPM Index

Make and Model Cont.

Comparing two current models, we see that Model B is weak in providing good Connectivity experiences, while Model A is poor at providing good Entertainment experiences. Both models earned similar low EPM Indices. However, the reasons behind their poor performance were completely different. If this study was conducted on a much larger scale, (beyond the exploratory study), much greater diagnostic detail would almost certainly emerge for models included.

Overall EPM Index	Notable Index Weaknesses	Impact of Technology Usage
	**Entertaining Driver & Others** **32%** Below Avg	☑ Low usage of native texting capability ☑ Below average usage of SXM despite relatively high penetration
	**Connecting & Communicating** **25%** Below Avg	☑ Low penetration and usage of WiFi hotspot (even when present) ☑ Low usage of connected services

Additional diagnostics on a larger sample would need to be performed to identify the reasons behind low scores for specific models.

**Caution: Small sample sizes*

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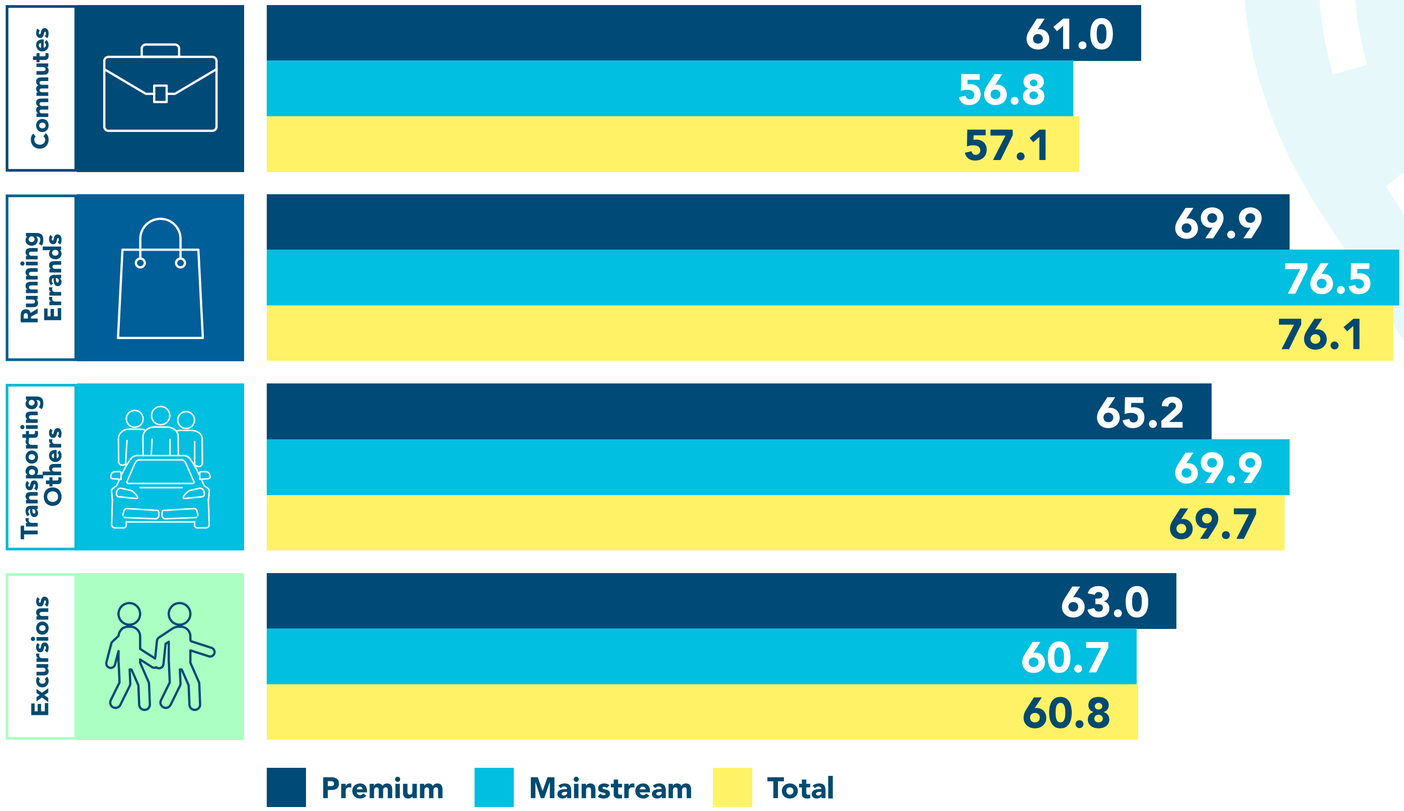
Automotive EPM Index

EPM scores also vary noticeably by trip type. You will see from the graphic below that the highest rated trip type was Running Errands, and the lowest was Commutes.

Trip level scores are similar for Premium and Mainstream vehicles.

EPM Index Scores by Trip Type

Errand Trips have the highest EPM score, while Commute Trips have the Lowest



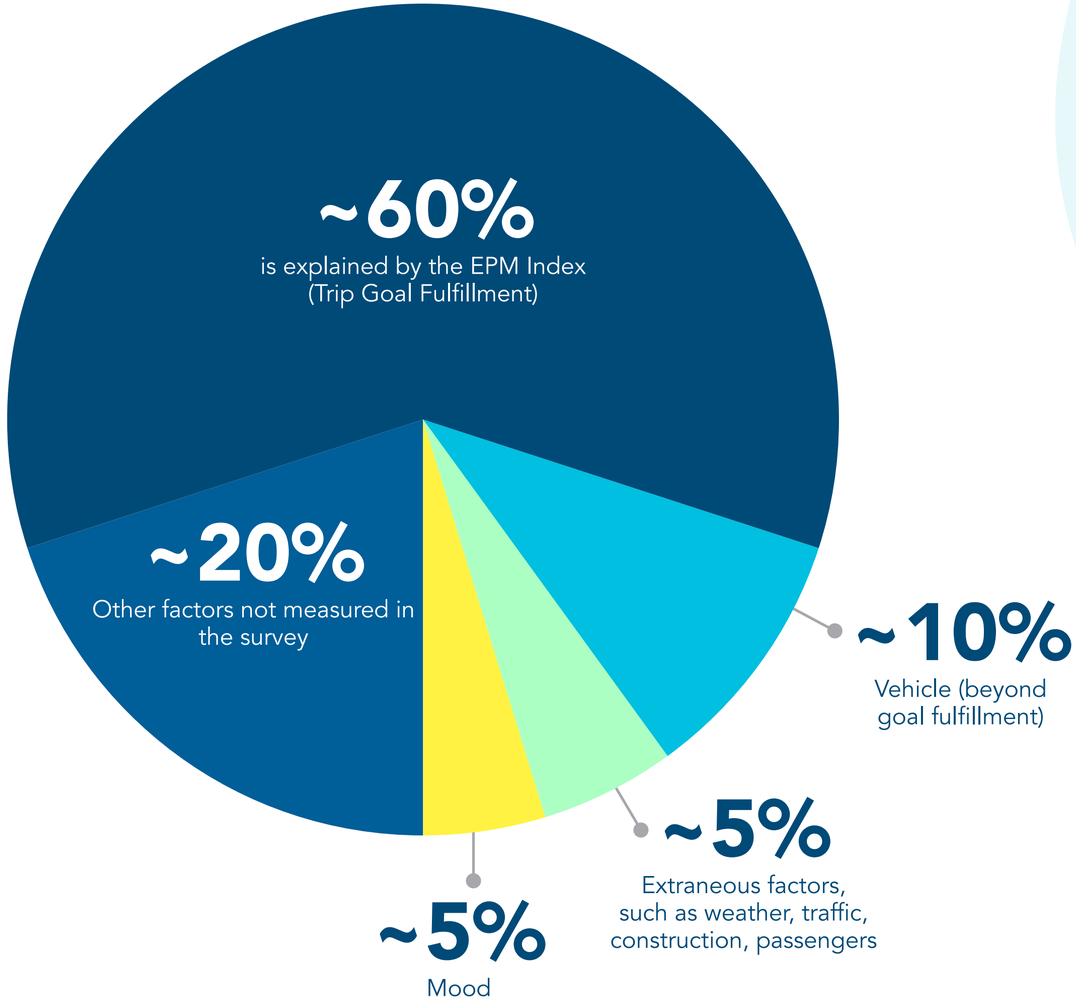
The trip purpose and experience for drivers and passengers in the light vehicle space cannot be overlooked. Just as commercial vehicles have segmented into use and purpose – from last mile / first mile, to long-haul, and to a variety of delivery applications – the explosion and pervasiveness of Zero Emission Vehicles for the light passenger sector will demand deeper diversification and fit for purpose.This is what we are seeing in the industry."

William ("Bill") Newman,
SAP America

Automotive EPM Index

The EPM Index accounts for most of the trip rating

Statistically, the EPM index explains the majority of the trip ratings, with ~60% being explained by the consumers' rating of how well their goals were fulfilled. Other factors that come into play are the vehicle (beyond goal fulfillment), extraneous factors (such as weather, traffic, construction & passengers) and the driver's mood.



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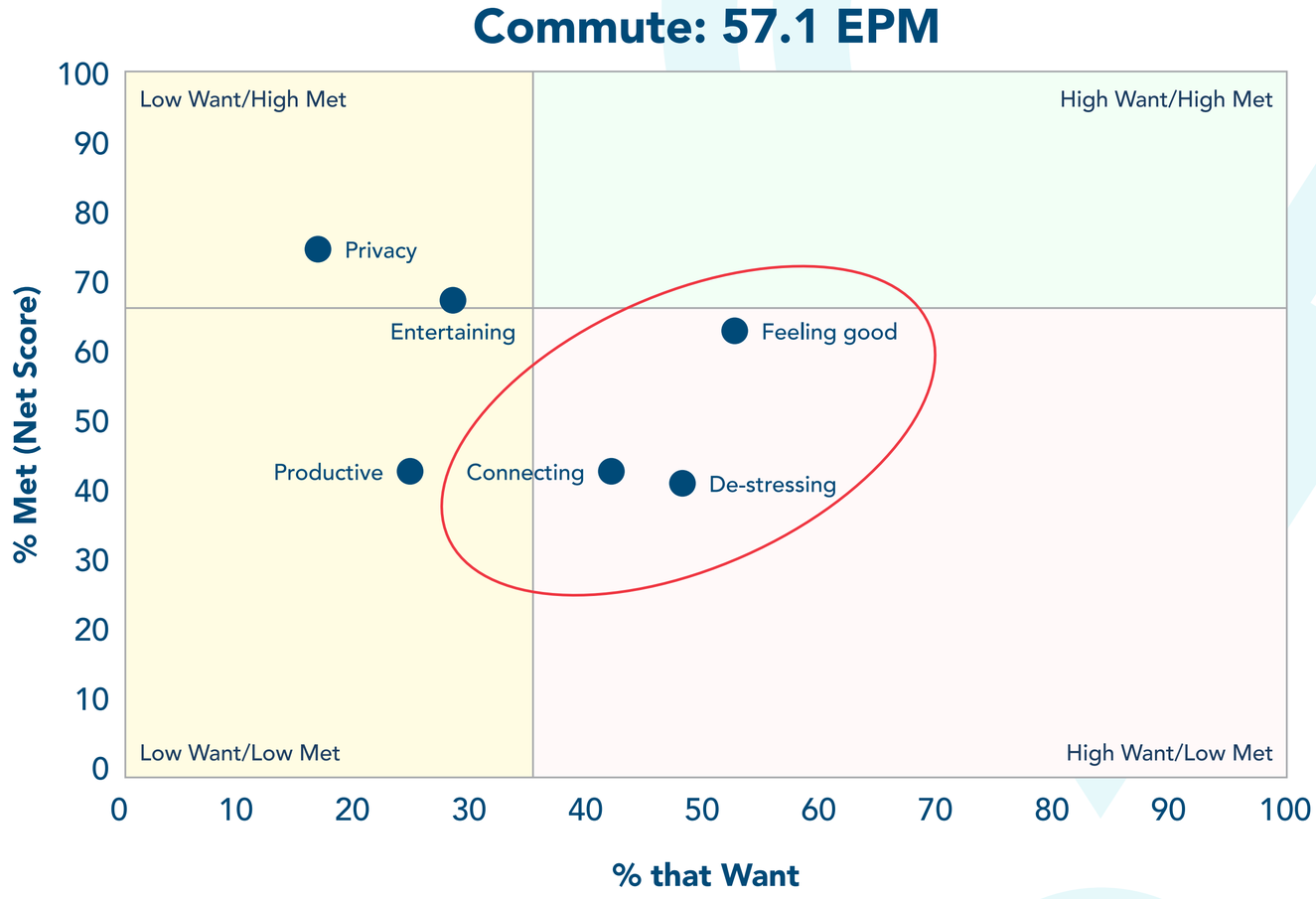
The Automotive EPM Index by Opportunity Matrix: Commutes

Further Insight into EPM Score by Trip Type – and Opportunity Areas

The charts in this section show percent desire for a particular goal (want), by the percent the experience met this particular goal listed. When experience goals appear in the upper right quadrant, it means that there was a high desire for the goal and the experience was rated high as well. This is the ideal quadrant for the goal to appear in. Conversely, those goals that appear in the lower left quadrant have a low "want" and a "low" experience rating as well. Let's review four examples by trip type. Within the Commutes trip type, key goals are not being met resulting in a lower EPM Index.

Opportunity

Explore options to enhance **Feeling Good + De-stressing + Connecting**

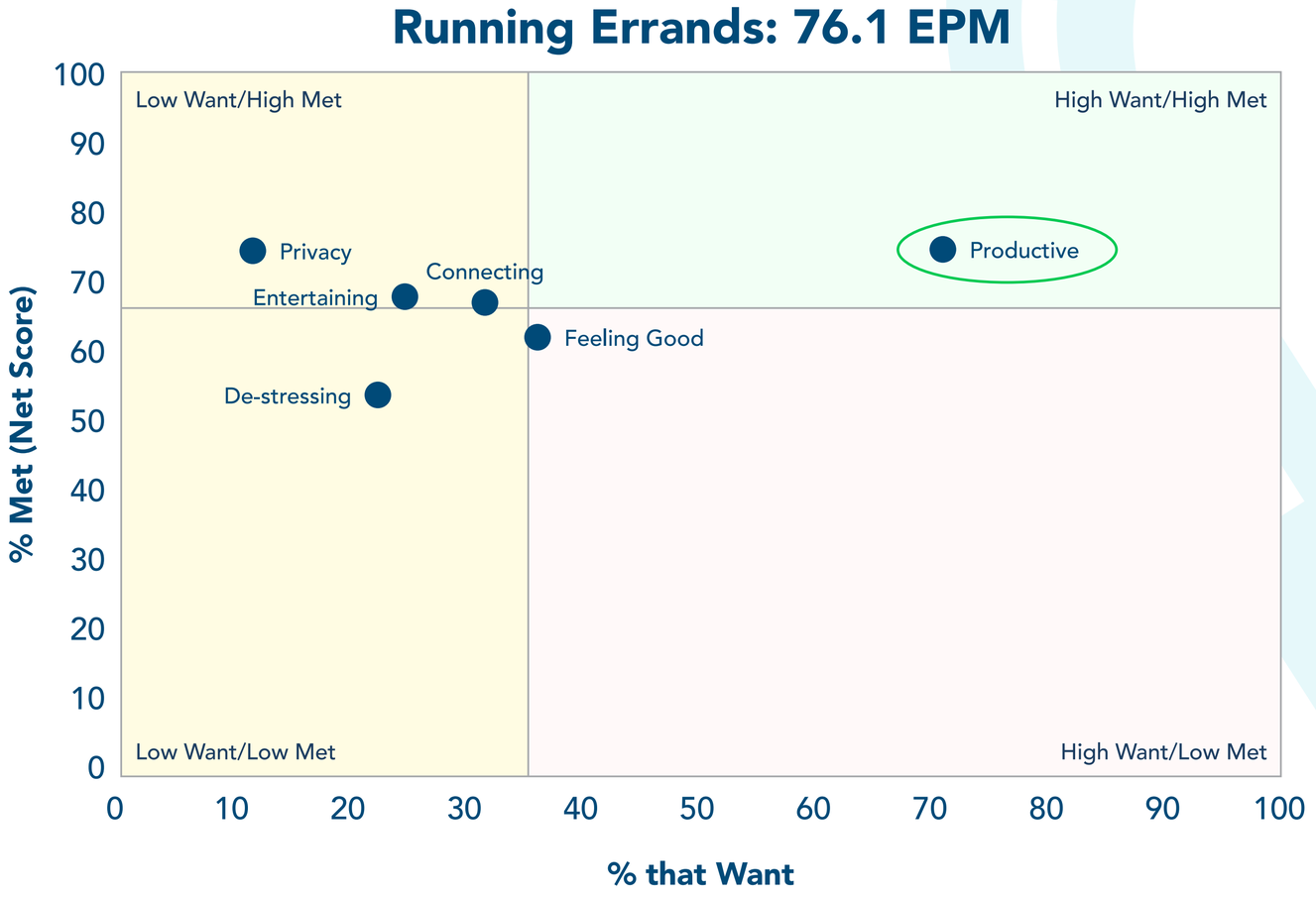


The Automotive EPM Index by Opportunity Matrix: Running Errands

When running errands, productivity is a key goal, and one that is well-met, ensuring a high EPM score. Within the Running Errands trip type, productivity is met at a high level, helping to explain the high EPM Index.

Opportunity

Maintain & support **Productivity** for Errand Running Trips

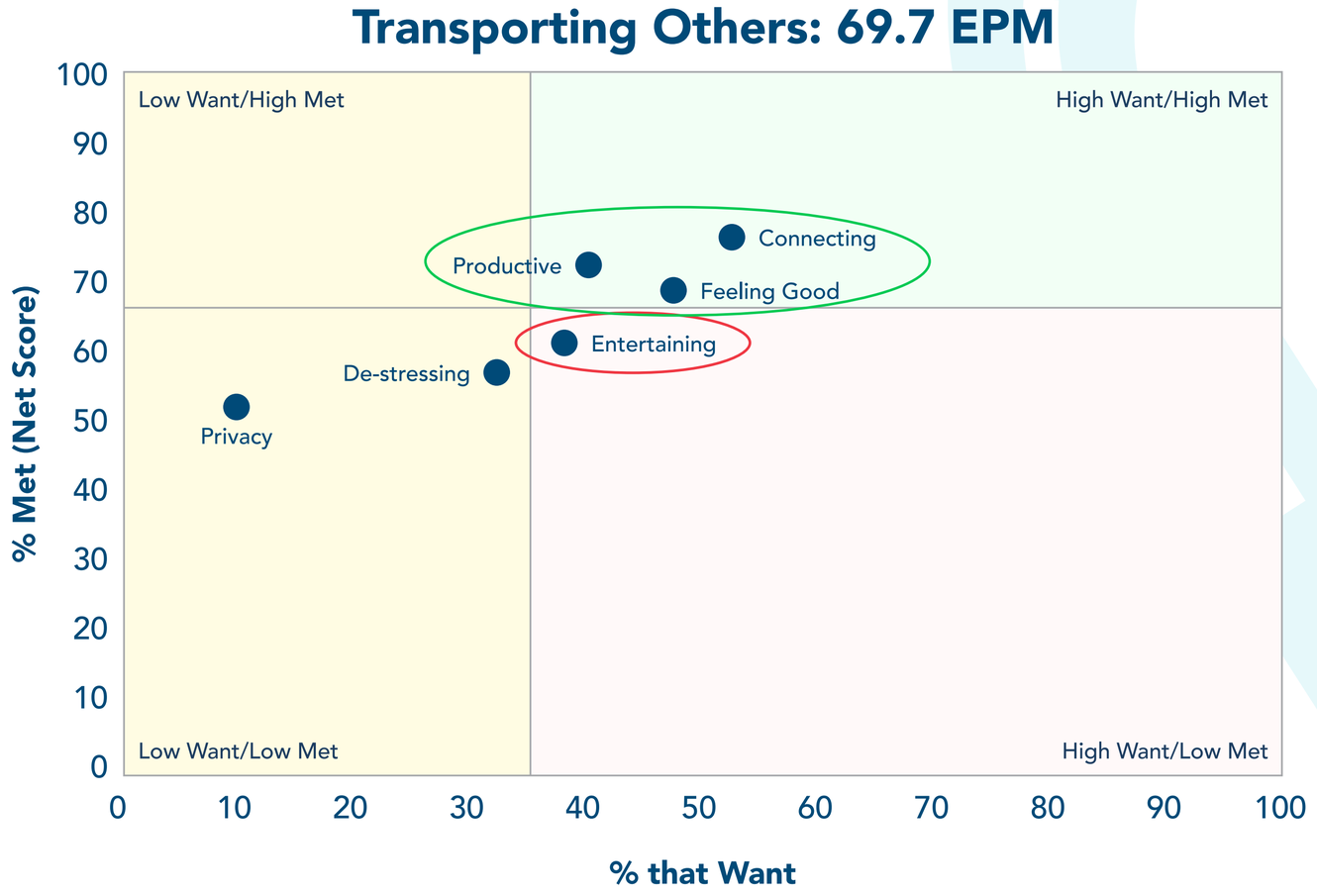


The Automotive EPM Index by Opportunity Matrix: Transporting Others

When Transporting Others, Connecting, Feeling Good and Being Productive are all important goals that are well achieved. However, Entertainment is a desired goal that is not well-met, indicating that there is room for improvement here. Within the Transporting Others trip type, important goals are well achieved, but Entertainment has room for improvement.

Opportunity

Explore options
to enhance **Entertaining**
experiences for
driver & passenger(s)

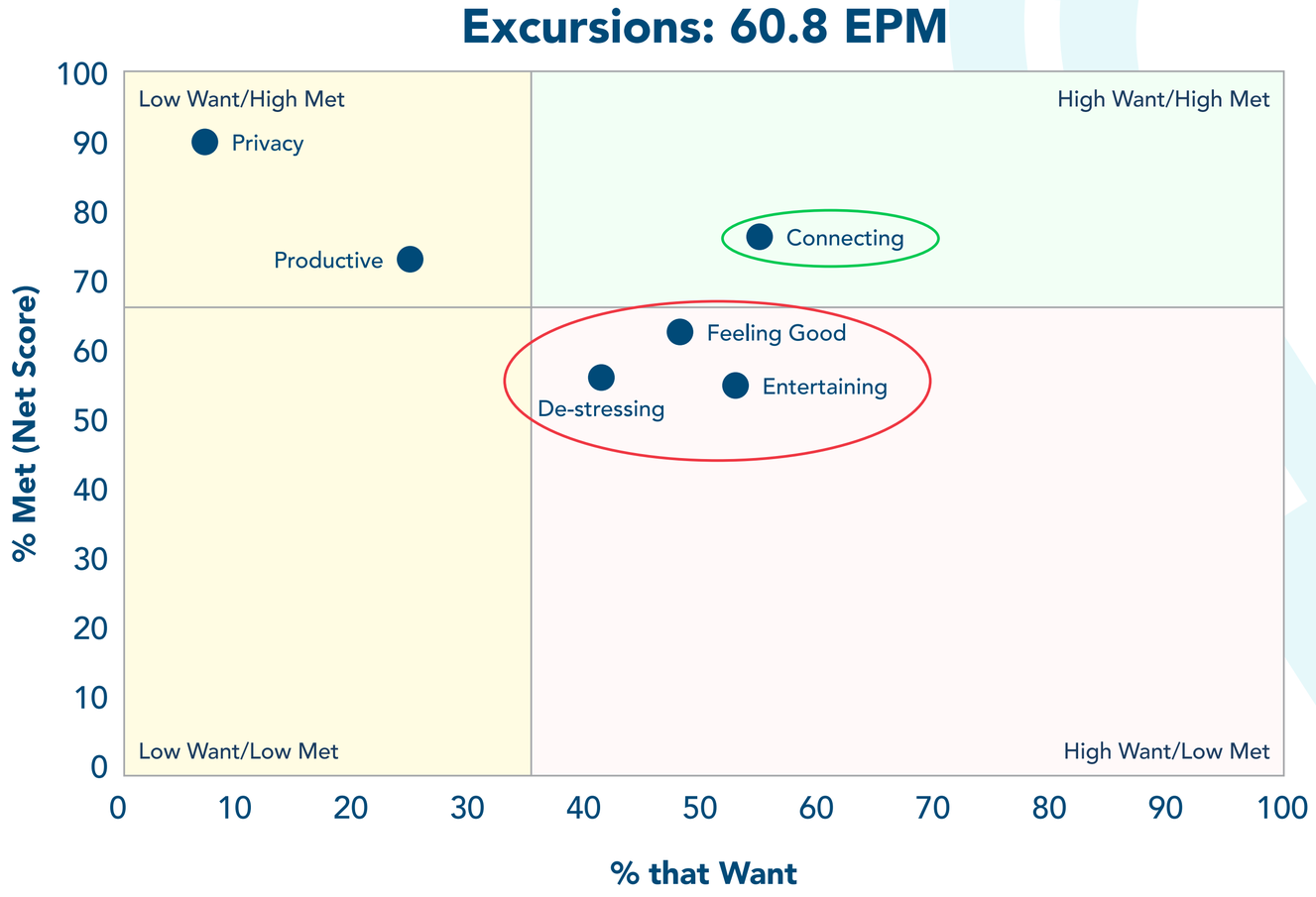


The Automotive EPM Index by Opportunity Matrix: Excursions

For Excursions, interesting enough, Connecting was a large goal that was well achieved. Other goals fell short of where they needed to be according to their importance level. Goals such as Feeling Good, Entertaining and De-Stressing should be addressed in order to elevate the EPM Index. Within the Excursions trip type, Connecting was well achieved while other key goals fell short.

Opportunity

Explore options to enhance **Feeling Good + De-stressing + Entertaining** experiences for driver & passenger(s)



Automotive EPM Index

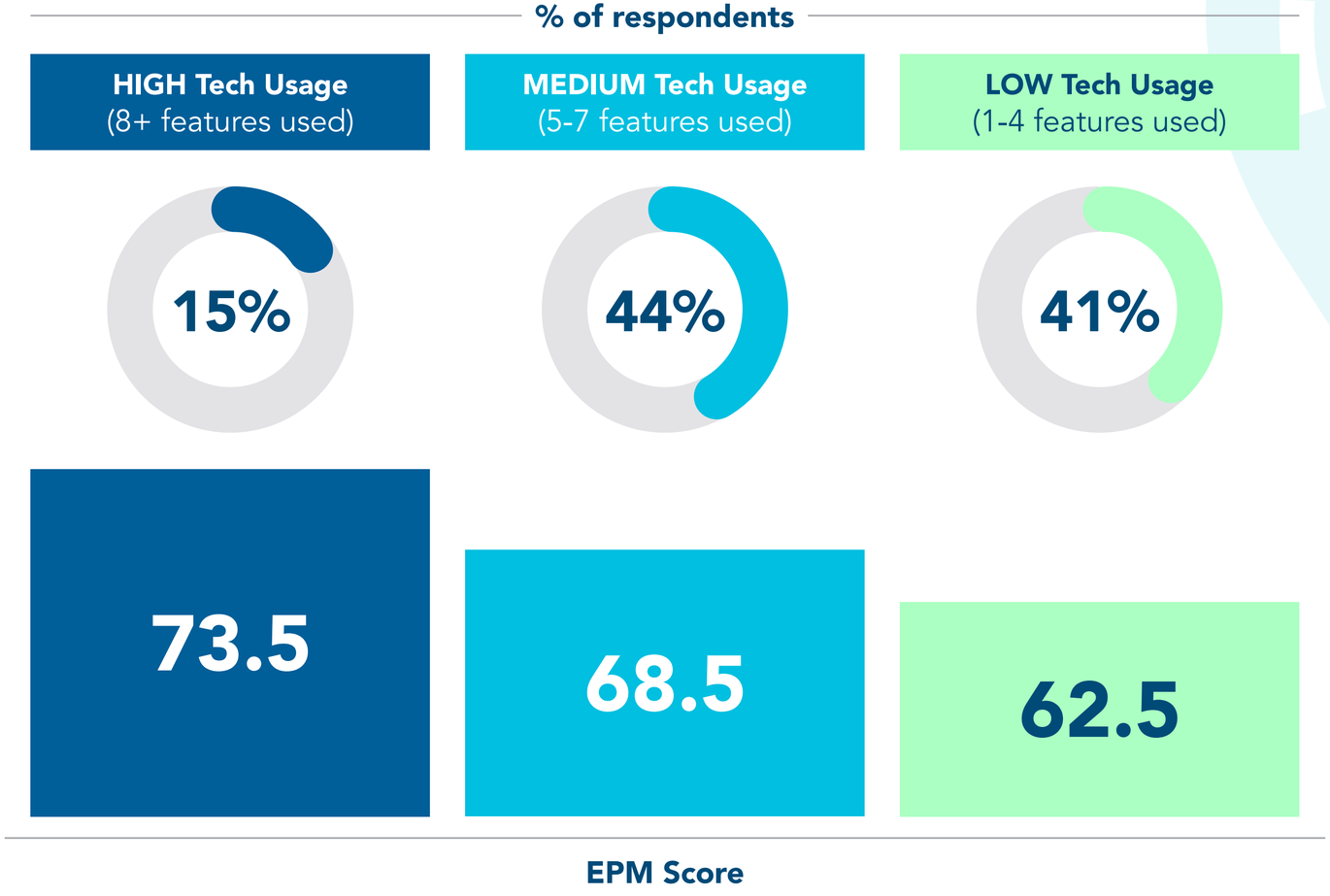
Technology Usage in Vehicle

There is a clear pattern identified showing that as more types of technology are used by the driver in the vehicle, the higher the EPM scores. Conversely, the less technology is used, the lower the EPM score. While the ultimate impact of technology usage varies by trip type, the evidence is clear that the use of technology in the vehicle tends to help consumers achieve their trip goals.

Tech features

- Audio system
- Satellite Radio (SXM)
- Built-in navigation system
- Apple CarPlay or Android Auto
- Connected services
- Voice recognition
- Vehicle's WiFi Hotspot
- Bluetooth for phone calls
- Bluetooth for listening to audio
- Texting using VR or screen

Tech Usage by EPM Score



"The consumer is looking for the latest technology in everything they buy. The automobile is certainly no exception. Therefore, Hyundai strives to be the first to place cutting-edge technology in its vehicles. The EPM Index in the new Exploratory Study created by the EPM Advisory Council shows that more technology use is associated with a higher experience rating. Customer training on how to use and benefit from the technologies is equally important."

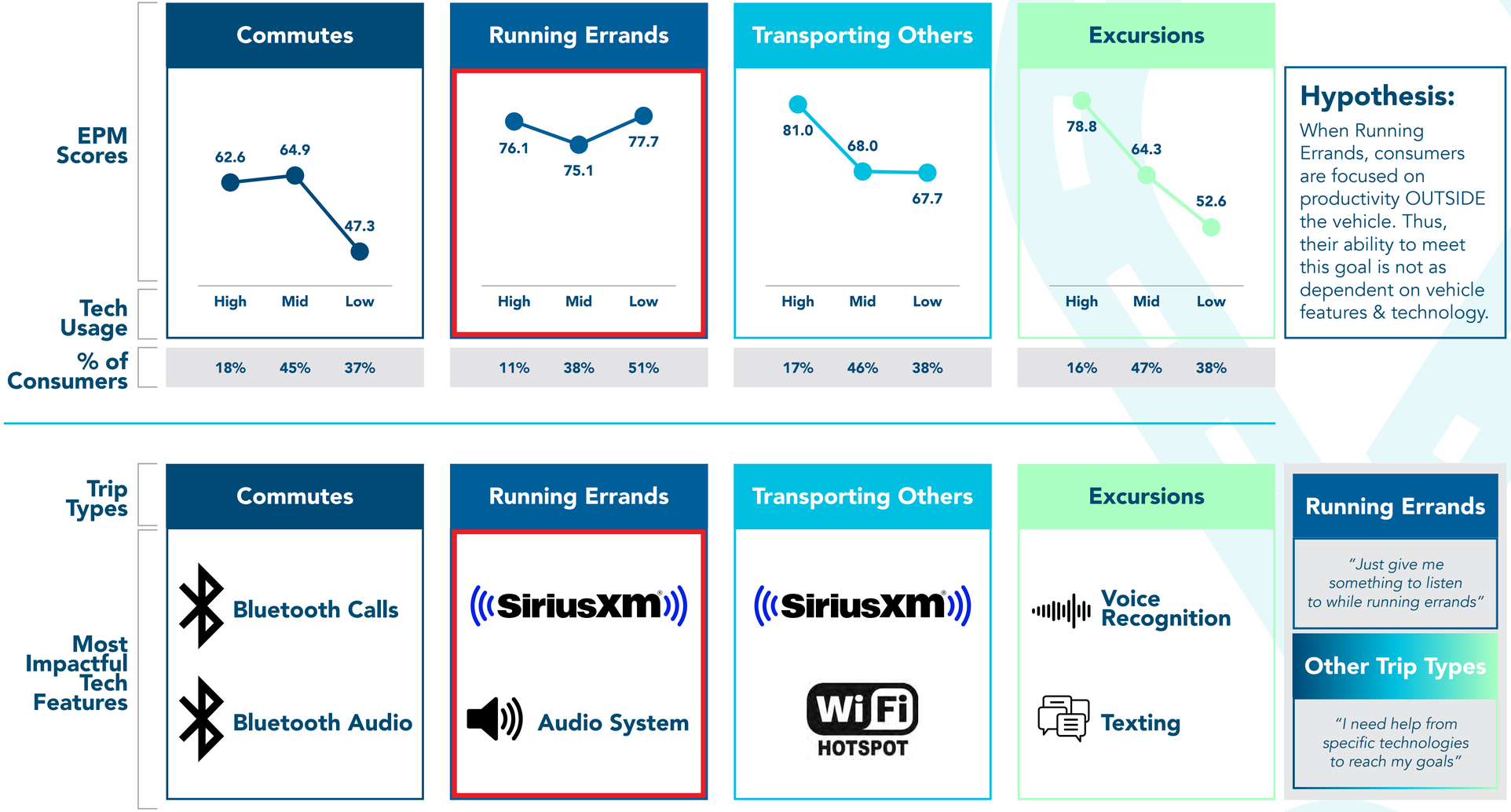
Manish Mehrotra, *Hyundai (HMA)*

Automotive EPM Index

Technology Usage Cont.

One exception to this rule is with Running Errands: Consumers reported lower technology use when Running Errands. The hypothesis for this is that consumers are focused on achieving productivity outside the vehicle, so their ability to meet this goal is less dependent on vehicle features and technology inside the vehicle. This hypothesis can be further explored in a full rollout of the EPM Study.

Beyond the overall use of technology, specific technologies were found to be more important for specific trip types. The most impactful technology features for Commutes were Bluetooth calls and Bluetooth Audio. Sirius XM and the Audio System were reported to be most important for Running Errands. Sirius XM and the WiFi Hotspot were reported to be most important for Transporting Others. For Excursions, Voice Recognition and Texting were reported to be most important.



Other Interesting Research Findings

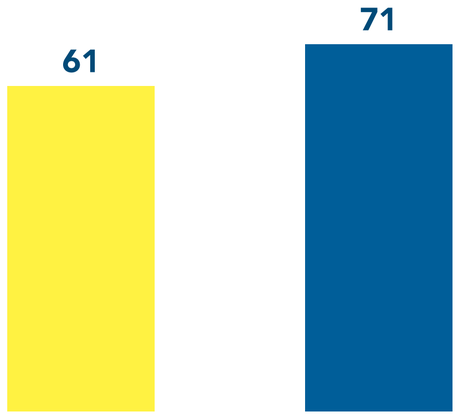
Vehicle Is Just a Tool

There are additional findings offered by the EPM Index Exploratory Report, too. Consumers who consider their vehicle 'just a tool' to get from A to B, had lower EPM ratings than consumers who who value their vehicle more. The average EPM Score for drivers who agreed that their vehicle is just a tool is 61, whereas those that disagreed had an average EPM score of 71. Agreement with this statement was more prevalent with mainstream consumers (48%) than premium consumers (32%). This may indicate premium SUV owners are more inclined to respond to "experience packages" for their vehicle.

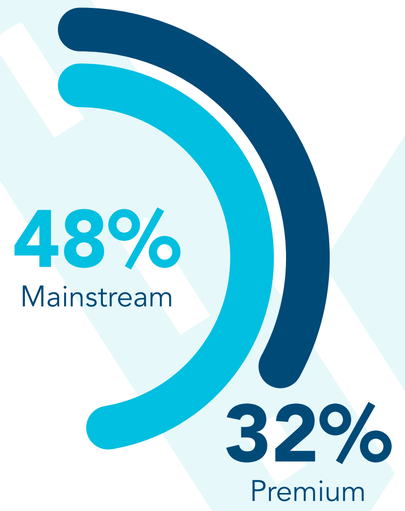
40%

Overall % that agree strongly or somewhat that my vehicle is just a tool to get from A to B

EPM Score Based on Vehicle Ownership Attitude



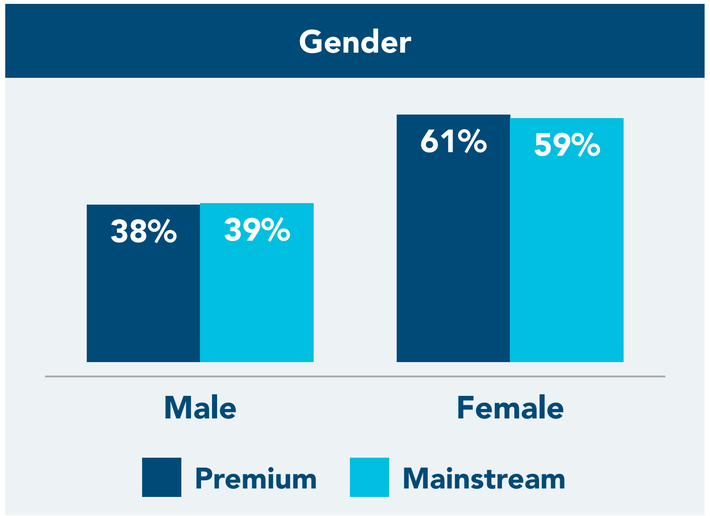
Premium/Mainstream Split of Vehicle is Just a Tool

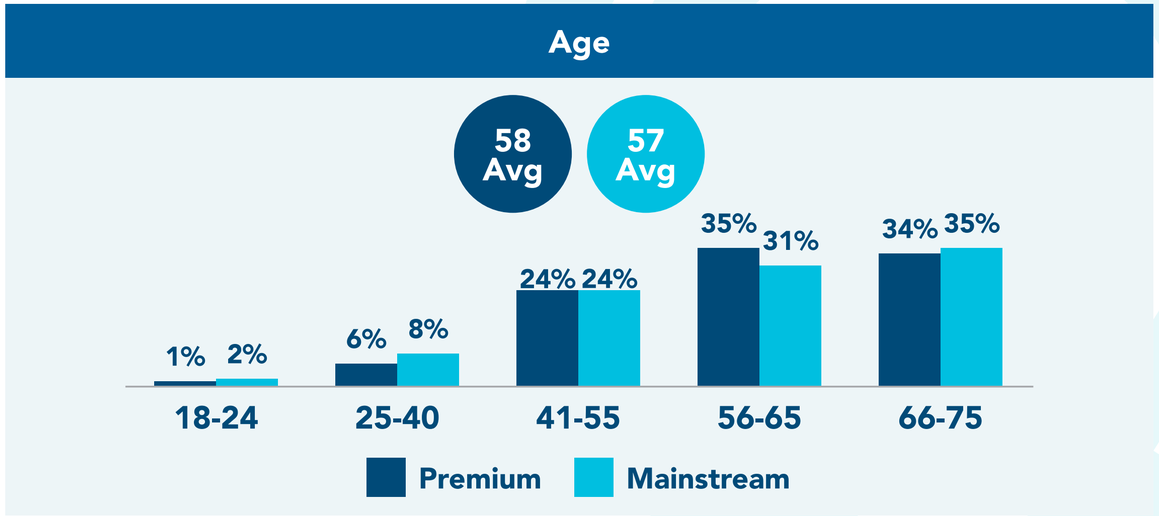


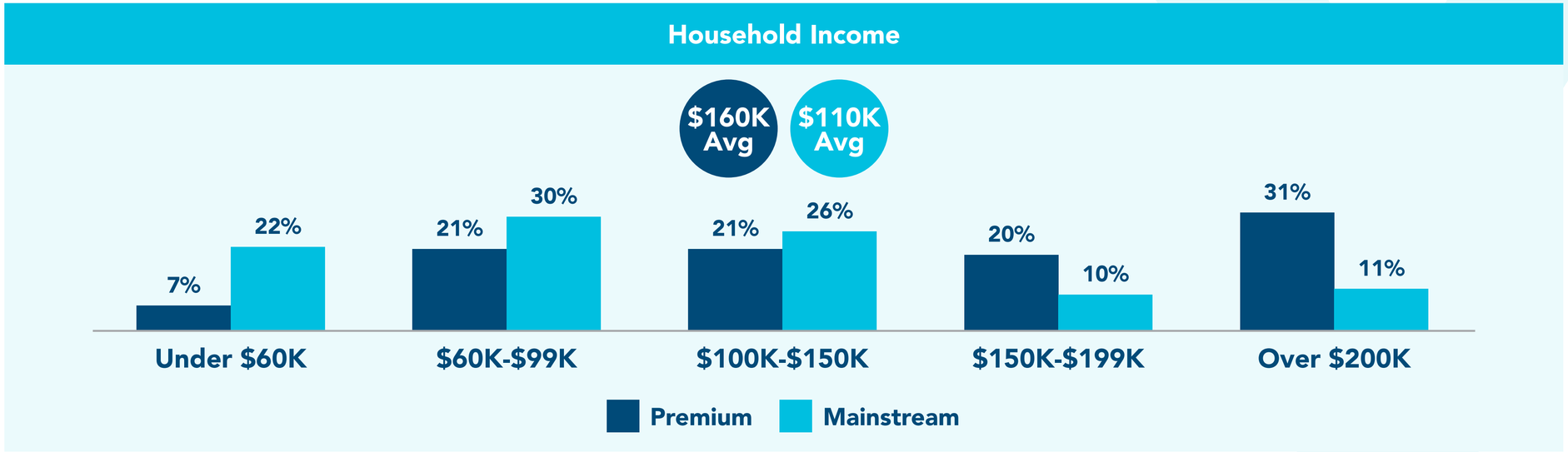
Other Interesting Research Findings Cont.

Demographics

Demographics for those that responded to the research study are located in the chart below. There is a difference demonstrated in household income by those buying a compact SUV in the mainstream segment versus premium, which is to be expected. Other demographics show similarities between the two groups.







Role of the EPM Advisory Council

Mobility is more than getting from one place to another. It's about shifting from one state of being to the next. The Experiences Per Mile vision gives people ownership of their experience in the car and transforms the value they place on the car and overall mobility experience.

Cox Automotive, HARMAN, HERE and SBD Automotive are companies that co-direct the EPM Adivsory Council. This Board of Directors, together with industry partners and stakeholders, is transforming the industry and media dialogue through the recently formed Experiences Per Mile Advisory Council.

The purpose of the council is to align automakers, Tier One suppliers, third-party providers, and other industry leaders, and to encourage collaboration regarding the changing value chains in the automotive industry which are being driven by the connected movement.

Active discussions center on the subject of intelligent technology, evolving consumer trends and how they're both reshaping the experience inside the vehicle as well as what this means for automakers and consumers alike. There's an urgent demand for consumer-centric, in-vehicle and mobility experiences and the most forward-thinking industry members must get involved now to drive a significant change. The council is shaping the future of EPM with a mission to promote collaboration, establish processes, and elevate the automotive ecosystem as a whole.

The purpose of the EPM Advisory Council is to help create a common purpose for the future of mobility. Please take a moment to visit the experiencespermile.org website to learn more. If you have questions or are interested in joining this effort, please complete the form on the website and submit it. We hope you found this research report insightful and it gave you some good ideas on where the automotive industry is headed. Take a moment to review the listing of all of our members on page 28 of this report.

"The future cockpit we've been contemplating for years is here today, with multi-screen technologies and full connectivity already becoming commonplace across many OEM platforms. This is only the beginning of the in-cabin transformation, as there are both requirements and opportunities to manage and personalize the audio and visual experiences. The adoption of in-cabin sensing technologies will allow new levels of content management by personalizing experiences for each of the occupants and adding new levels of comfort and safety otherwise not possible."

Anthony Landamia, *Xperi*

"We deliver an outdoor experience that is class leading in defining 'Think Outside™.' The digital cockpit and infotainment from trails to weather and even 'buddy tracking' opened this experience to far more than just the driver: a 'total experience' for all those in the vehicle. Expanding this capability not only creates an ecosystem of connectivity to both OE and dealer but delivers a compressed connection to the customer!"

Patrick Weldon, *Polaris*

This Report Is Brought to You by the Experiences Per Mile Advisory Council

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