

THE GLOBAL AUTOMOTIVE CONSUMER – CASE STUDY

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Purpose: The purpose of the work is to present the research results of 26,000 consumers in 25 countries provided by the Deloitte Report from 2022 as the Global Automotive Consumer.

Design/methodology/approach: Due to the cognitive nature of the work, the aim of the work will be achieved using the method of analyzing the literature and newest Deloitte research from 2022. Literature studies only foreign publications.

Findings: The Global Automotive Consumer is very widely described in international literature. Many reports have been created and the most updated Deloitte shows overview current situation in researched matter.

Originality/value: The analysis of international literature and report from 2022 with statistics shows global automotive consumer preferences as well as most development countries next to similarities and differences between worldwide automotive community. It includes some influences due to pandemic Covid-19.

Keywords: Global, Automotive, Consumer, Trends.

Category of the paper: Research paper.

1. Introduction

Sustainable technologies hold the promise to reduce harmful emissions and use resources more efficiently (Hockerts, Wüstenhagen, 2010, pp. 481-492). Sustainable technologies often do not fit existing production methods, managerial expertise and customer preferences (Johnson and Suskewicz, 2009, pp. 52-60).

Budde Christensen put it, “it might be that innovative technologies that have the potential to meet key sustainability targets are not easily introduced by existing business models within a sector, and that only by changes to the business model would such technologies become commercially viable” (Christensen, Wells, Cipcigan, 2012, p. 499).

One barrier to market penetration is that sustainable technologies challenge prevailing business practices that depend heavily on the use of fossil fuels, especially in the oil and gas, electricity and automotive sectors (Jacobsson and Bergek, 2004, pp. 815-849).

Understanding consumer decision-making in an increasingly dynamic environment becomes of utmost concern. Henry Ford has been attributed as saying that if horse and buggy drivers had been asked what type of innovation they sought, they'd say they wanted a faster horse. For much of its history, the auto industry has followed this thinking and been driven by engineering or financial-based decisions (Townsend, Calantone, 2014, pp. 4-7).

In their paper, John R. Hauser, Songting Dong, and Min Ding investigate the role of heuristics in the development of consumer preferences. In an era when the majority of consumer research is completed prior to visiting a dealer or distributor, understanding the process by which consumer preferences are formed is an important area of study. Their research makes a significant contribution because it suggests articulated preferences are more accurate measures when engendered by self-reflection; but articulation of preferences prior to self-reflection interferes with the accuracy of preference articulation (Hauser, Dong, Ding, 2013, pp. 17-32).

Matthias Holweg in his paper, a review of the state of innovation in the United Kingdom suggests that the internal combustion engine will remain primary for the foreseeable future, mostly due to these infrastructure issues. While it is anticipated that a variety of alternatives will be available in the marketplace, the expectation is that continued incremental innovation of existing technology will forge the way forward in low-carbon emission vehicles (JBS, 2013). This is important in light of the findings of two studies undertaken as part of the research paper presented by Jonatan Pinkse, René Bohnsack, and Ans Kolk. Their research employs qualitative and quantitative methods to consider how firm-level strategies for creating both transformational and systematic innovations that are adopted by consumers are impacted by both private and public initiatives (Bohnsack, Pinkse, Kolk, 2013, pp. 1-46).

M. Berk Talay, Roger J. Calantone, and Clay M. Voorhees contribute to our knowledge of the competitive environment by considering the interactions between competitors over time. Their research shows that innovation is fundamental to the survival of automotive brands over the long term, but competitors make gains from innovations via comparative moves. An important finding is these gains are temporary. Understanding the importance of continuous product innovation is therefore critical for automotive firms operating in a hypercompetitive marketplace, with a myriad of competitors (Talay, Calantone, Voorhees, 2014, pp. 61-78).

2. Methods

Deloitte for over a decade has been exploring automotive consumer trends impacting a rapidly evolving global mobility ecosystem. From September through October 2021, Deloitte surveyed more than 26,000 consumers in 25 countries to explore opinions regarding a variety of critical issues impacting the automotive sector, including the development of advanced

technologies. The overall goal of this annual study is to answer important questions that can help companies prioritize and better position their business strategies and investments (Deloitte, 2022).

For purpose of the following thesis have been stated:

1. Willingness to pay for advanced tech remains limited.
2. Interest in electrified vehicles (EVs) driven by lower running costs and better experience.
3. Interest in EVs driven by lower running costs and better experience.
4. Personal vehicles continue as the preferred mode of transportation.

Following research questions have been created:

1. How preferences for electric vehicle look like worldwide?
2. Which factors that impact the decision to acquire an electrified vehicle?
3. Which location people expect to charge their vehicle most often?
4. What are reasons for not charging the electrified vehicle at home?
5. How many consumers would alter their decision to purchase an electrified vehicle if the electricity used for mobility was priced similar to current fossil fuels?
6. What are greatest concern regarding all battery-powered electric vehicles?
7. What are consumer expectation of driving range from fully charged all-battery electric vehicle?
8. How mobility modes to meet transportation needs?
9. What are top most important characteristics of a vehicle subscription?

3. Results

The highest interest for battery electric vehicle (23%) is in South Korea, China (17%) and Germany (15%). Plug-in hybrid electric with 37% is being preferred in Japan. In United States with 69% are still being preferred gasoline/diesel vehicles. These different preferences worldwide are differed due to:

- household budget and income,
- habits,
- education and knowledge,
- technological solutions,
- development of required infrastructure.

Consumer powertrain preferences for their next vehicle

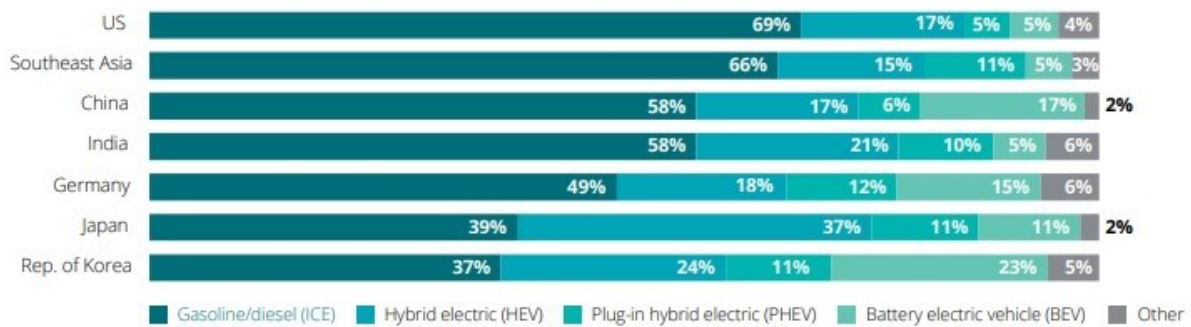


Figure 1. Consumer powertrain preferences for their next vehicle. Source: Deloitte 2022. Global Automotive Consumer Study.

For the most countries people are drawn for electric vehicles due to following reason:

- concern about climate change,
- reduced emissions,
- lower fuel costs.

Only in China for all researched countries lower fuel costs are on the 4th positions. This can be caused by lower household income and lower level of education in this matter.

Factors that impact the decision to acquire an electrified vehicle

Factors	US	Germany	Japan	Rep. of Korea	China	India	Southeast Asia
Concern about climate change/ reduced emissions	2	1	2	2	1	1	2
Concern about personal health	6	4	5	7	3	4	5
Lower fuel costs	1	2	1	1	4	2	1
Less maintenance	4	7	7	3	6	5	4
Better driving experience	3	5	3	4	2	3	3
Government incentives/ stimulus programs	5	3	4	5	7	6	6
Potential for extra taxes/ levies applied to internal combustion vehicles	7	6	6	6	5	7	7

■ Top concern

Figure 2. Factors that impact the decision to acquire an electrified vehicle. Source: Deloitte 2022. Global Automotive Consumer Study.

3 out of 4 in Japan, India and United States consumers are being prepared to charge their battery electric vehicle and plug-in hybrid electric at home. South East Region and South Korea users are willing to charge their vehicles in public. This can be caused by lower education or lower access to public charging points.

Location people expect to charge their electrified vehicle most often



Figure 3. Location people expect to charge their vehicle most often. Source: Deloitte 2022. Global Automotive Consumer Study.

Consumers in China, India and the SEA region are planning to use both renewable power and regular grid. This is caused potentially by availability and access to resources and infrastructure development depended on region. South Korea and United States are being orientated in regular power grid due to high tech infrastructure and flexibility.

Source of power consumers intend to use to charge electric vehicles

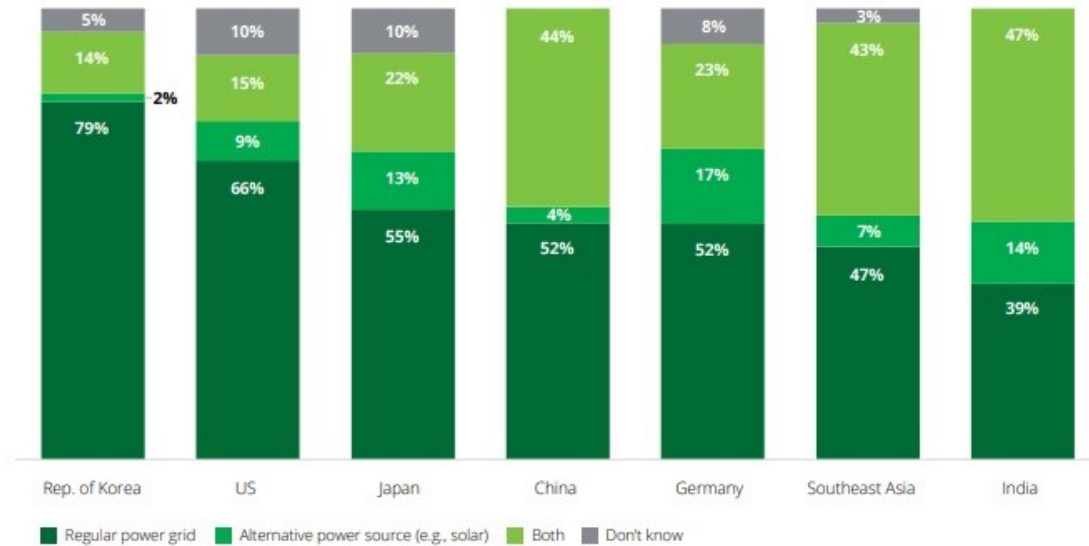


Figure 4. Source of power consumers intend to use to charge electric vehicles. Source: Deloitte 2022. Global Automotive Consumer Study.

Consumers who are not planning to charge a PHEV or BEV at home as main reasons due to the fact are giving:

- can't install a charger,
- cost of installing charger is prohibitive.

Reasons for not charging the electrified vehicle at home

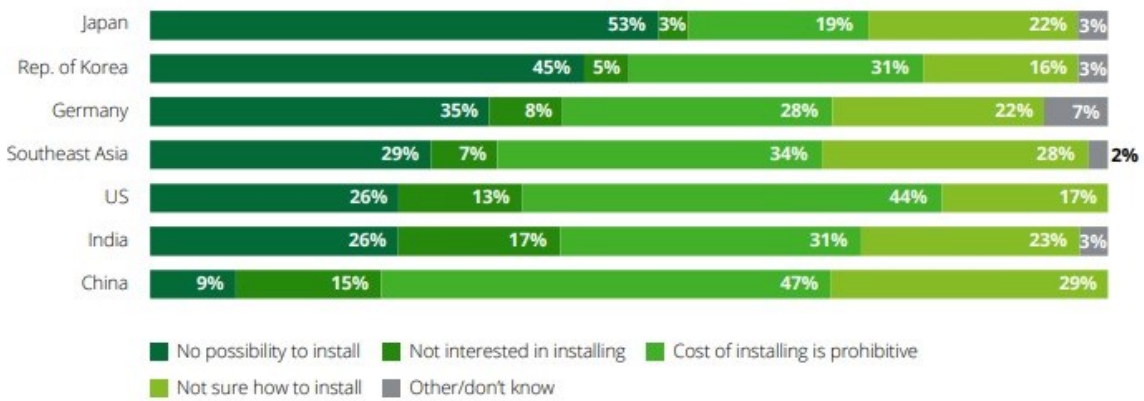


Figure 5. Reasons for not charging the electrified vehicle at home. Source: Deloitte 2022. Global Automotive Consumer Study.

Price of electricity if increases worldwide may sway a significant number of consumers away from all types of electric vehicles purchase in most global markets. Countries like China, India and United States of America and on the top of the pyramid of these decisions.

How many consumers would alter their decision to purchase an electrified vehicle if the electricity used for mobility was priced similar to current fossil fuels?

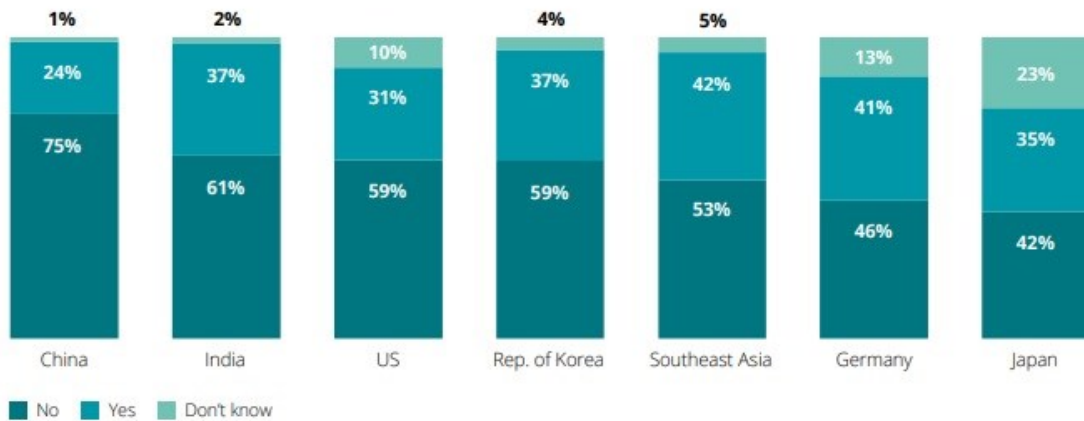


Figure 6. How many consumers would alter their decision to purchase an electrified vehicle if the electricity used for mobility was priced similar to current fossil fuels? Source: Deloitte 2022. Global Automotive Consumer Study.

Consumers who are concerned about considering an electric vehicle have declared this is due:

- driving range (US, Germany, China),
- lack of public electric vehicle charging infrastructure (Japan, South Korea, India and Southeast Asia).

Some other reasons for this matter are:

- lack of charger at home,
- time require to charge,
- safety concerns with battery technology.

Greatest concern regarding all battery-powered electric vehicles

Concern	US	Germany	Japan	Rep. of Korea	China	India	Southeast Asia
Driving range	20%	24%	15%	10%	22%	10%	13%
Cost/price premium	13%	12%	16%	9%	6%	12%	11%
Uncertain resale value	2%	2%	2%	1%	4%	4%	3%
Potential for extra taxes/levies associated with BEVs	4%	2%	1%	2%	6%	5%	4%
Time required to charge	10%	9%	8%	15%	11%	11%	11%
Lack of public electric vehicle charging infrastructure	14%	14%	19%	26%	12%	23%	28%
Lack of charger at home	8%	10%	19%	7%	5%	4%	6%
Lack of alternate power source (e.g., solar) at home	5%	4%	4%	3%	4%	6%	5%
Safety concerns with battery technology	9%	8%	6%	19%	16%	14%	11%
Lack of sustainability (i.e., battery manufacturing/recycling)	6%	10%	4%	4%	12%	8%	6%
Lack of choice	3%	3%	1%	1%	3%	3%	2%

 Greatest concern

Figure 7. Greatest concern regarding all battery-powered electric vehicles. Source: Deloitte 2022. Global Automotive Consumer Study.

Consumers expectations are varied due to worldwide location and infrastructure development. Users from United States are expecting to full charge electric vehicles for over 500 miles and users in China, Japan and India are content with range of around 250 miles.

Consumer expectation of driving range from a fully charged all-battery electric vehicle

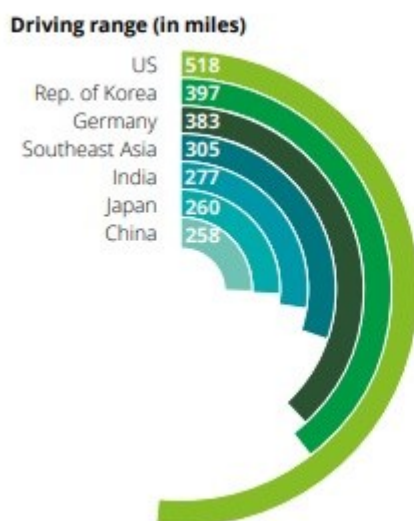


Figure 8. Consumer expectation of driving range from fully charged all-battery electric vehicle. Source: Deloitte 2022. Global Automotive Consumer Study.

The pandemic Covid-19 has had relative impact on next vehicle purchase. These impact is particular clearly visible in India and Southeast Asia with almost 2 out of 3 consumers. Main reason given to purchase a electric vehicle is to avoid public transportation. Germany, Japan and United States are still on the top of pyramid of purchasing electric vehicle by consumer. This can be caused by higher household income, development of infrastructure and higher percentage of education in the field



Figure 9. Future vehicle intentions. Source: Deloitte 2022. Global Automotive Consumer Study.

The main reason to acquire next vehicle via a virtual process for consumers are:

- convenience,
- speed,
- easy of use.

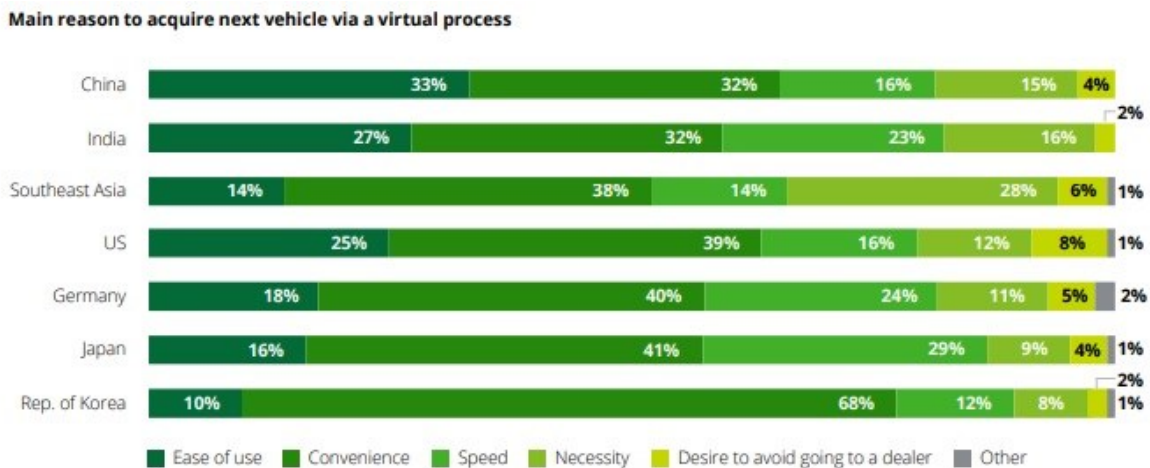


Figure 9. Main reason to acquire next vehicle via a virtual process. Source: Deloitte 2022. Global Automotive Consumer Study.

In United States, Germany and China are being preferred personal vehicles as a mobility choice across market. All these 3 countries are in this matter equal or above 60%. Public transport in the second most chosen type of transportation in Japan and South Korea.

Mobility modes to meet transportation needs

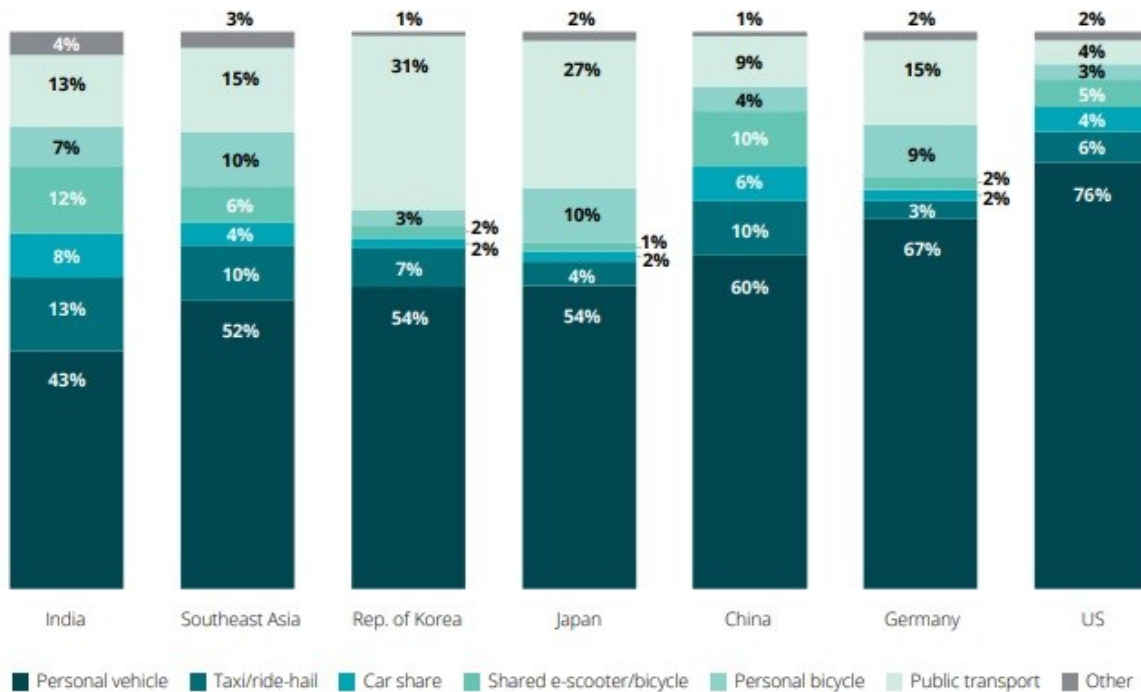


Figure 10. Mobility modes to meet transportation needs. Source: Deloitte 2022. Global Automotive Consumer Study.

The most important characteristics of a vehicle subscription which consumers would prefer are:

- flexibility,
- availability of vehicles,
- convenience.

Top three most important characteristics of a vehicle subscription

Characteristics	US	Germany	Japan	Rep. of Korea	China	India	Southeast Asia
Convenience (e.g., all relevant services included, except for fuel)	1	1	1	1	1	1	1
Increased flexibility (e.g., shorter contract durations)	4	2	2	3	2	2	2
Possibility to exchange vehicles	2	5	5	4	3	3	4
Possibility to subscribe to a vehicle segment (e.g., SUVs) instead of a specific model	7	9	10	10	5	5	7
Possibility to subscribe to a specific model instead of a vehicle segment	9	10	11	13	8	9	12
Availability of vehicles (e.g., short delivery times)	3	3	3	9	4	4	3
Home delivery services (e.g., vehicle is dropped off and picked up at desired location)	8	6	8	11	6	10	8
Hassle-free online contract closing/full digital customer journey	12	8	6	6	10	12	11
Full cost control due to transparent and predictable fixed monthly fees (e.g., no surprises via all-in offers)	5	4	4	2	9	8	5
Availability of complementary premium services (e.g., concierge services, valet parking)	14	14	14	12	11	14	14
Premium vehicles/brands offered	10	12	12	8	7	11	10
Selection of only brand-new vehicles (for a comparable higher monthly rate)	13	13	13	14	12	13	13
Selection of brand new as well as certified pre-owned vehicles (for a comparable lower monthly rate)	11	11	9	7	14	7	9
Possibility to test new vehicles for a certain period without consequences	6	7	7	5	13	6	6

Figure 11. Top three most important characteristics of a vehicle subscription. Source: Deloitte 2022. Global Automotive Consumer Study.

4. Discussion

The key conclusion based on the Deloitte 2022 Report about global Automotive Consumer Study are:

- consumer preferences are differed due to household budget and income, habits, education and knowledge, technological solutions, development of required infrastructure,
- for the most countries people are drawn for electric vehicles due to following reason: concern about climate change, reduced emissions, lower fuel costs,

- consumers in China, India and the SEA region are planning to use both renewable power and regular grid,
- price of electricity if increases worldwide may sway a significant number of consumers away from all types of electric vehicles purchase in most global markets,
- consumers who are concerned about considering an electric vehicle have declared this is due to driving range and lack of public electric vehicle charging infrastructure,
- the main reason to acquire next vehicle via a virtual process for consumers are convenience, speed, ease of use.
- in United States, Germany and China are being preferred personal vehicles as a mobility choice across market.

5. Summary

The Global Automotive Consumer Study informs about the point of view on the evolution of mobility, smart cities, connectivity, transportation, and other issues surrounding the movement of people and goods. Based on the study provided following thesis have been proved:

- willingness to pay for advanced tech remains limited,
- interests in electrical vehicles driven are running by lower costs and better experience,
- personal vehicles continued to be preferred as mode of transportation,

Due to subject of article further researches should be developed as the pandemic Covid-19 and military aggression Russia on Ukraine have been still causing many changes in the matter.

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