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Customer Car Preference Options: A Case Of Mercedes-Benz

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Mercedes-Benz asiakkaat ovat haastavien valintojen äärellä kun asiakkaat miettivät minkälainen Mercedes-Benz auto olisi hyvä vaihtoehto tällä hetkellä. Ukrainan sota Venäjän kanssa on nostanut polttoainehintoja ja inflaatio on korkealla tasolla sodasta johtuen. Ostovoima on hiipunut inflaation takia Mercedes-Benz asiakkailta. Tavoitteena oli kartoittaa Mercedes-Benz asiakkaiden seuraavan auton voimalinja, diesel, bensa, hybridi tai sähkö ja minkälainen korimalli olisi suosituin, katumaasturi, farmari ,sedan, porrasperä vai shooting brake. ’

Käymme läpi myös jokaisen voimalinjan historiaa, miten kaikki on saanut alkunsa.

Tätä dataa voidaan käyttää autoalan parissa työskentelevien yritysten avuksi. He voivat käyttää dataa, näkemään mitä Mercedes-Benz asiakkaat tällä hetkellä etsivät autoltaan ja voivat tehdä yritykselle toimenpiteitä datan perusteella.

Sousituimmat voimalinjat olivet edelleen perinteiset diesel ja bensa voimalinjat, sähkö ja hybridi tulivat vielä tässä tutkimuksessa polttomoottreiden perässä kun kyse oli seuraavan auton voimalinjan valinnasta. Korimalleina suosituimmat oli Farmari, katumaasturi ja sedan mallit, porrasperä ja shooting brake olivat vähemmän haluttuja korimalleja.

Data kerättiin M.Vänttinen Oy:llä, joka toimii Mercedes-Benz korjaamona / huolto paikkana Pirkanmaan alueella Tampereella. He toimivat tämän tutkimuksen toimeksiantajana.

Avainsanat Mercedes-Benz, inflaatio, Ukrainan sota, voimalinjat, polttoaineet.
Sivut 34 sivua ja liitteitä 1 sivua

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International Business Abstract
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Mercedes-Benz customers are in for challenging decisions when selecting the next Mercedes-Brenz vehicle. The Russo-Ukranian war has had a price increase on fuels used in Mercedes-Benz vehicles. The purchasing power has decreased in cause of inlfation for the Mercedes-Benz customer. The aim of this thesis was to map out the Mercedes-Benz customers preferences for the next desired vehicle, because of the current challenging times. Which drivetrain would the most popular in the current situation, diesel, petrol, hybrid or electric variants, what bodystyle is the most popular for the Mercedes-Benz customer, SUV, estate, sedan, hatchback or shooting brake are all the questions that need to be answered.

In the theoretical framework the author also goes through the history of the drivetrains to see where it all began with each drivetrain. For the emperical section the data collected can be applied to use in businesses in the automotive sector especially if the data is suitable for the businesses, it can be used in any way they see fitting.

The results of the thesis show that the most popular drivetrains were the internal combustion variants, diesel was the most popular and petrol was second, when the customer is seeking to buy a Mercedes-Benz vehicle at the moment. The most popular bodystyles were Estate, Sedan and SUV variants of the Mercedes-Benz lineup.

Keywords Mercedes-Benz, inlfation, Russo.Ukraine war, drivetrains, fuels.
Pages 34 pages and appendices 1 pages

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1 Introduction

This thesis aiming to provide help for organizations / businesses who sell Mercedes-Benz vehicles or repair / service Mercedes-Benz cars as their main business model and priority. What kind of Mercedes-Benz cars should a Mercedes-Benz car seller keep in the inventory at any given time?- What kind of spare parts should a Mercedes-Benz service keep in the businesses spare part inventory?-This is why a questionnaire was made to gather data for this topic to research what kind of Mercedes-Benz vehicles are the customers buying in the Pirkanmaa region new or used vehicles The questionnaire had 30 participants, which is not a large scope, but will give some kind of suggestion as to what the Mercedes-Benz vehicle owners are thinking at the moment regarding exchanging their vehicle to a new one

In this thesis the author is researching Mercedes-Benz customer car preferences, what kind of Mercedes-Benz cars are the current Mercedes-Benz owners looking to purchase and own both today and in the future. This data will be collected to help business in the automotive sector in the Pirkanmaa region in Finland to indentify customer behavior when purhacasing a Mercedes-Benz vehicle.This research question was relevant because of the energy crisis that the Russo-Ukrainian war raised throughout Europe, including Finland- Another factor for this research is the electric vehicle revolution in the car industry at the moment and this has been a trend for a few years now. Many car makers including Mercedes-Benz have been developing electric and hybrid cars with a relatevily fast pace to keep up with the competition or trying be at the fore front and pioneer of the electric or hybrid car sector. Expensive fuels (diesel and petrol) and Finnish taxation of different drivetrains plays a factor also when the customer is choosing a car, in this case a Mercedes-Benz. The body shape of the Mercedes-Benz vehicles chosen by the customers is significant and one of the key questions to is the SUV body still the most attractive to the customers. Many of the car makers are heavily investing to porduce different kind of SUV variants of their models, including Mercedes-Benz. What is the most popular production year range to the customers, this will echo in the most popular drivetrain option. The newer the car, it is more likely electricity will play a role in the drivetrain. The research question is mostly relevant when the customer is choosing a used Mercedes-Benz vehicle and this is why the research question for the thesis is: What is the most desirable drivetrain in the used car market? The new car sales have been in downward trend in Finland, high interest rates and the threat of a recession is one of the factors new cars are not that high of a priority in the Finnish consumers priority list and new cars were in the minority when the customers were thinking of buying or trading their current Mercedes-Benz.

The data was collected for the comissioning company M.Vänttinen Oy which is a Mercedes-Benz repair and service shop in Tampere Pirkanmaa region. M. Vänttinen was founded in 1974, the business has almost a 50 year experince in repairing and servicing Mercedes-Benz vehicles and a broad customer base in the Pirkanmaa region which was used to the advantage of this resaearch paper. The data was collected by a written questionnaire in 2023, where the thirty customers of M.Vänttinen Oy who participated in the questionnaire would circle the following data. which included:

- The year model of the current Mercedes-Benz vehicle of the customer
    - Year model from & until 1980-1990
    - Year model from & until 1990-2000
    - Year model from & until 2000-2010
    - Year model from & until 2010-2020
    - Year model from & until 2020-2025
- The year model of the customers next Mercedes-Benz vehicle
  (Above the year model choices)
- The drivetrain option for the customers current Mercedes-Benz and the customers next Mercedes-Benz drivetrain, Diesel, Petrol, Hybrid, Electric
- The bodyshape of the next Mercedes-Benz vehicle, Estate, Hatchback, SUV, Sedan, Shooting Brake.
- Is the Mercedes-Benz customer choosing a new Mercedes-Benz or a used one for the customers next Mercedes-Benz.

2 Theoretical background

2.1 Consumer Preference Theory

A consumer is person or a household which can hold one or more persons under the same roof. A consumer is a basic economic unit that decides what commodities or services are bought or used and how many of them are bought or used(Salvatore,2008,p.57).

A customers preferences might not mirror the customers income, the abilty to purchase certain goods or services does not affect what the customer might like. Allthough the customer might like to purchase a Porsche 911, but can purchase a Honda civic. It does not mean that the consumer stops liking Porsches, because the consumer drives a Honda(Unacademy.com)..

What makes a person to choose a product or a service ? Why do consumers buy some products and services and not others ? How do they determine how many or how much they choose to purchase a product or a service ? These are the fundamental questions a business wants to answer.

2.1.1 Total and Marginal Utility

Products and services are desired so that human wants are satisfied. The Property of a product or a service that satisfies the human want/need is called **UTILITY.** When a person consumes or uses a product or a service more per time period, their **TOTAL UTILITY** or product / service satisfaction increases, but their marginal utility goes down, **MARGINAL UTILITY**, is the extra utility received from purhasing or using a product / service one more time. **UTIL**, the measure of utility. Utility = The ability of a product to satisfy a want/ need.

Different utilitys reflects the tastes, wants, needs of a particula person, they are unique to the person and it relftects the persons particular subjective consumer preferences. Different persons have different tastes and different utilitys. The persons utilitys remain unchanged aslong as the persons tastes remain the same(Salvatore,2008,p.58-60).

2.1.2 Cardinal / Ordinal Utility

CARDINAL UTILITY, means that a person can attach certain values of numbers of utils when using products / services each number of a good or goods could counted cardinally just like weight, temperature or height(Salvatore, 2008, p.60-61).

ORDINAL UTILITY, ranks the uitlity received from consuming different amounts of product / good or a baskets of goods / products. Ordinal utility defines that lets say a consumer eats two hamburgers it gives the consumer more utility than when eating only one hamburger, but it does not measure how much utility the consumer receives when eating the second hamburger. As an example three hamburgers gives the consumer more utility than two hamburgers, but not how many more utils Ordinal utility is more inaccurate compared to cardinal utility, **ordinal utility only ranks various consumption bundles, compared to cardinal utility which gives an actual index or a measure of satisfaction**. The distinction berween cardinal and ordinal utility is of importance, a theory of consumer behavior can be made on the weaker assumption of ordinal utility without needing a more accurate assumption of the cardinal measurement. Utility theore can provide a convinient windov to the analysis of consumer tastes and choices when facing uncertainty(Salvatore, 2008, p.60-61).

2.1.3 Law of Dimishing Marginal Utility

Law of dimishing marginal utility = Each additional unit of product / good will eventually give less and less extra utility. Expample of law of dimishing marginal utility, if a consumer eats enough of hamburgers to be full, the consumer has reached utility. When the consumer eats more hambuergers he or she might get the feeling of sick thus the consumer loses utility(Salvatore,2008,p.60).

2.1.4 Factors affecting change in preferences of the customer

Advertising, advertising is a tool which can affect the tastes of an consumer, Adds attract consumers towards certain goods or services, sometimes the adds are so attractive it can make the consumer purchase a product or a service the consumer does not need.

Cost, price of a product can help attract customers towards the product and it can also steer consumers away from the product. Consumers can be price sensitive.

Alternatives, Price sensitive consumers can search for the cheaper alternative from the same product or a service, Substitute products / services can alter a consumers buying preference.

Social Institutions, Humans are social animals, we humans are bonded by various social institues as, Religion, family, friends and so on.

Income level, When consumer faces a change in income level whether that is rise or fall in income a change in the consumtion pattern is relevant. Changes can be seen in qualitive and quantative behaviour.

(Unacademy.com)

2.1.5 Conclusion

Consumer Prefenrence Theory is the study of consumers behavioral habits and pattern. When resources are scarce, the consumer keeps its satisfaction level in the centre of buying habits. The centre mix includes factors such as Advertising, Income level, Cost, Sovial instituitons, and alternatives. Value, utility, risk and conviniance are cerebral elements of consumer preferences(Unacademy.com).

2.2 Russo-Ukrainian war affecting Finnish private consumers purchasing power and habits

2.2.1 Energy crisis

This research question was relevant because of the energy crisis that the Russo-Ukrainian war raised allover Europe, including Finland. The energy sector was affected by the war in Ukraine, the availability of energy was cut down by the sanctions imposed on Russias attack on Ukraine. Russia was a large provider of energy in Europe, natural gas and oil were exported to Europe from Russia, the energy imports from Russia to Europe was almost 42% in the year 2021. Since then the Russian energy imports to Europe have faulted to 12% in November of 2022(euronews.com).

How did the energy crisis affect the purchasing habits of the Finnish consumers when regarding car purchases ? The Russo-Ukranian war weakened the the Finnish economy's outlook because of rising inflation and weakened foreign trade with Russia which the war had a significant affect. The economy was growing at a 1.7% rate before the war, but the growth will slow to only 0.5 % because of the war according to Bank of Finland(bofbulletin.fi).Russia's war in ukraine is also weakening the global economy growth, uncertainty in supply chaiins and raising raw material, food and energy prices are having a negative affect on the economy world wide not just in Finland. Private buying power is halted by high level of inflation, rising prices are stiffling the consumer purchasing power.The growth projections of the Finnish economy could be even worse that the projected 0.5% rate and a recession in the future is not out the question(bofbulletin.fi).

(Bofbulletin.fi)

Key forecast outcomes (1/2)

Percentage change on the previous year	**2020**	**2021**	**2022[f]**	**2023[f]**	**2024[f]**
GDP	-2.3	3.5	1.7	0.5	1.5
Private consumption	-4.1	3.1	1.7	0.6	1.0
Public consumption	0.4	3.2	1.8	-0.3	0.5
Fixed investment	-0.3	1.2	5.1	-0.7	0.9
Private fixed investment	-2.9	4.6	4.7	-1.3	0.5
Public fixed investment	11.2	-12.0	6.9	2.0	2.5
Exports	-7.5	4.7	1.5	2.1	3.5
Imports	-6.6	5.3	3.5	1.0	1.8
Effect of demand components on growth					
Domestic demand	-2.1	2.7	2.5	0.1	0.8

Key forecast outcomes (1/2)					
Net exports	-0.3	-0.2	-0.8	0.5	0.7
Changes in inventories and statistical error	0.2	1.0	0.0	0.0	0.0
Savings rate, households, %	4.7	1.0	-1.0	-0.2	0.2
Current account, %, in proportion to GDP	0.7	0.7	-1.0	-0.6	0.1

The Russo Ukranian war was a factor in the Finnish consumers to buy more electric or hybrid cars due to the inflation in the energy sector, namely in the fuel distribution and sales sector, the sales of used electric vehicles rose 75% in 2023 compared to 2022, hybrid vehicles sales rose 32% in 2023 compared to 2022(kauppalehti.fi). Rising fuel costs from the inflation of the energy sector caused both diesel and petrol prices to rise significantly, the oil barrel prices rose from 70 dollars per barrel to 110 dollars per barrel in march of 2022 in the aftermath of the Russian attack to Ukraine, according to world economic forum(weforum.org). The rising prices of fuels had a postive effect on the sales of electirc and hybrid vehicles when Finnish consumers were trying to save money on private automotive transportation costs.

2.2.2 High interest rates

High interest rates is also one of the factors which is affecting the purhasing power of the Finnish citizens and has haltered household consumption. The rapid rise of the interest rates has risen the the cost of living and has a negative affect on the economy and purhasing power overall. The majority of Finnish housing loans were variable rate loans which means when the interest rate rises the amount of payment regading the mortgage rises also or when the rate drops the mortgage payment drops also. The purhasing power deficit has had a purhasing habit change, the finnish citizens are more carefull of spending their earned money due to the inflatory affects on the purchasing power(bofbulletin.fi).

2.2.3 Inflation

Inflation jumped in Finland and across Europe because of the war in Ukraine, the inflation was in a moderate levels before the war, but the war affected various industries in a inflatory manner. The inflation level rose 7% in Finland, that is the highest rise in inflation in Finlad since the 1980’s. The inflation highly affected the consumer buying power the most, the purchase power dropped the most since the 1970¨s in Finland.

The war had inflatory reactions in the energy industry, Russia was a big importer of energy to Europe, Russia exported large numbers of oil and gas to Europe. the sanctions applied to

Russia dropped the energy dependence from Russai significantly after the start of the war. European countries sought after different importers of energy and invested in solar and wind energy to compensate the loss of the Russian energy imports(euronews.com).

The price of food also rose significantly, the Russo-Ukraninian war has had a affect on the food prices in Finland and in Europe. Fertilizers are important in food production and Russia and Belarus are significant importers of fertilizers, Russia and Belarus imported 41% of the worlds potash imports, Russia imported 14% of the global urea trade, Russia imported 11% of the global phosphate trade, the sanctions imposed on both countries by European Union and other western powers had a rising affect on the fertilizer prices(ifpri.org). Russia also wanted to harrass the Ukranian exports in the Black Sea to stop Ukranian wheat exportation around the world, african and middle eastern countries rely on imported Ukraninan wheat, which will cause the wheat prices to increase(luke.fi). Food production is also dependent on fossil fuels, such as diesel, diesel is uset by agricultural machines on food production processes, the high price of fuels will have a price increase in food supply and and food production.

2.3 Diesel History, Mercedes-Benz Diesel Cars, Diesel Taxation In Finland.

2.3.1 Diesel history

Diesel engines were introduced in February 23, 1893 by the founder of diesel, Rudolf Diesel. February 23,1893 is when the patent was filed, June 16 1897 is the year the first Diesel engine was shown for the public in Kassel Germany. The twentyfive horsepower, four.stroke, single cylinder engine Rudolf Diesel designed and created. Rudolf Diesel was a thermodynamics engineer student in Germany, Munich(Britannica.com).

Diesel fuel combusts by the pressure and heat in the engines cylinder, the piston in the engine compresses the fuel and air mixture, in which a combustion of the diesel fuel is

generated. Diesel engines has a four stroke combustion cycle when the engine is running. The intake stroke, air comes to the cylinder via the intake valves when piston is moving downwards in the cylinder. Compression stroke is created when the piston is moving upwards and compressing the air.Combustion stroke, fuel is injected by the injector and ingnited at an predetermined time which drives the piston downwards. Exhaust stroke, when piston is moving upwards toward the top of the cylinder the exhaust is being pushed out by the combustion process in the cylinder(uti.edu.2020)

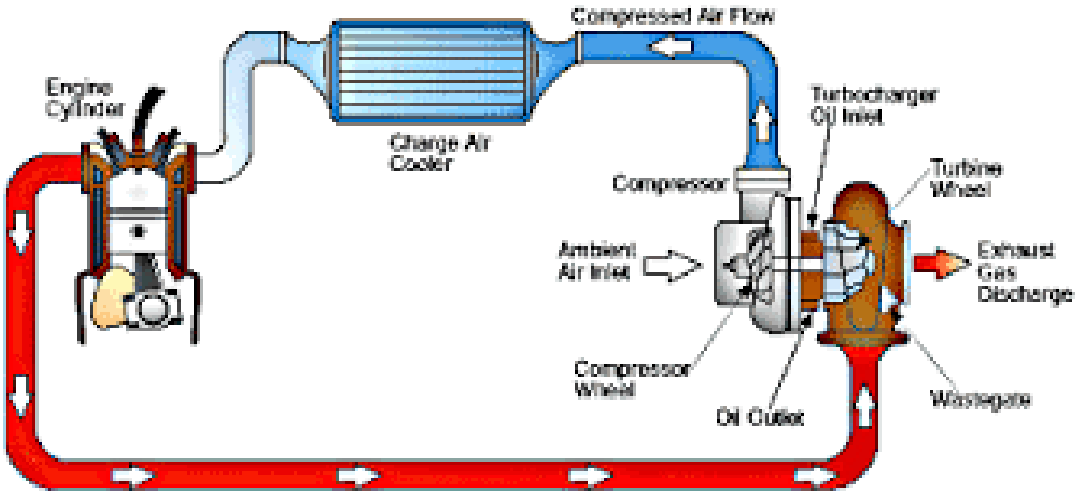
Rudolf Diesel was studying in Munich, when he contemplated on the idea of designing and creating a combustion engine, based on the idea of the steam engine. Steam engines were not that efficient, the steam engine only had a effiency of 3% thus wasting the majority of the heat the steam engine produced. The diesel engine managed to get a effiency number 26.2%, almost ten times as much, Rudolf diesel was on the right path for engine effency(Hand Book Of Diesel Engiines). Rudolph Diesel had a hypothesis that a greater the compression in the cylinder, the greater the engine effiency and power generation will be(uti.edu.2020).

Alfred Buchi combined turbocharging and diesel engines in 1925 in switzerland. Turbochargers work by utilizing the exhaust gases to power the turbochargers turbine wheels, the turbos turbine wheel or wheels are mounted on a shaft wich rotates by the exhaust gasses power. When the shaft rotates via the turbine wheels it creates a negative pressure and sucks air to the turbo, the air is compressed by the turbocharger and enters the charge air cooler which cools the compressed air and enters the engines cylinder head and cylinder block where the compressed air ignites and produces power through the ignition process. The turbine wheels can gain speeds up to 350.000 revolutions per minute (RPM) and speeds up 1900 kilometersanhour(km/h) (garrettmotion.com).

Combining turbocharging to the diesel engine, the effiency of the diesel engine rose up to 40% compared to a non turbocharged diesel engine. Modern diesel engine uses the principles of Alfred Buchis findings(uti.edu.2020). Modern turbodiesel engines use a variable geometry turbocharing (VGT) systems, for better fuel economy, more power, lower emissions and better throttle response. The flow of exhaust through the turbo is directed by row of vanes placed in the turbocharger, the vanes move to match the boost required for the engine. At low engine speeds the turbo’s variable vanes close so that the turbocharger restricts the airflow through the turbo, this increases the turbines power and boost levels. At high engine speeds the variable vanes will open for maximum exhaist gas flow levels, this avoids the turbo for spooling too fast and maintains the desired boost pressure levels created by the the turbo for the turbodiesel engine. The benefits of this behavior are better torque

levls for the engine, especially at low engine speeds, also this allows the turbocharger deliver more power for the engine allover the the engines rev range. Better acceleration by the increased torque and power levels through the rev range, increasing response from the engine and cleaner combiustion in the engines cylinders which means lower emissions from the exhaust(Garretmotion.com).

A picture of a turbocharger system(2015,cobbtuning.com).



Modern diesel technology is much more efficient compared to the early days of Rudolf Diesel. Todays diesel engines a primarily commonrail turbodiesel technology based units, highly accurate doases of diesel for the combustion chamber creates high effiency levels for modern EU emission standards and for low diesel consumption in modern diesel vehicles (Passenger car common rail system for future emission standards). Modern diesel engines can be two times as economical / efficient compared to a petrol engine which means you can travel two times the distance with the same amount of diesel when compared to petrol engine.(uti.edu.2020).

Diesel engines have been the backbone of many industries and fields, such as trucking, transport, train transporting, boats and ships, military, energy sector, emergency units, generator industry, the applications for diesel engines are many(cummings.com,2023).

2.3.2 Diesel Taxation

Diesel vehicles in Finland has a higher taxation model compared to Petrol, Electric and hybrid vehicles. It is called the motive power tax, käyttövoimavero in Finnish. Diesel taxation is 5.5 cents a day for every 100kg compare this for a petrol hybrid vehicles 0,5 cents a day for every 100kg (www.veronmaksajat.fi). The difference is significant. The harsch taxation of

diesel vehicles is a big reason why new diesel cars are being sold in such a low numbers in Finland nowadays. In 2022 the total percentage of new cars sold that were diesel powered was 8.62 % when compared to 2015 35.68 %. High diesel prices in 2022 and onwards, high taxes for diesel equals low sales(aut.fi).

(Aut.fi)

	Diesel / Diesel	Bensiini / Gasoline	Ladattava hybridi / PHEV	Sähkö / BEV	Metaani / Methane	Etanoli / Ethanol	
2015	35,68 %	63,47 %	0,38 %	0,22 %	0,15 %	0,10 %	
2016	33,16 %	65,48 %	1,02 %	0,19 %	0,14 %	0,01 %	
2017	30,41 %	66,65 %	2,15 %	0,42 %	0,37 %	0,00 %	
2018	24,01 %	70,29 %	4,09 %	0,64 %	0,96 %	0,00 %	
2019	19,14 %	72,10 %	5,22 %	1,66 %	1,88 %	0,00 %	
2020	14,66 %	65,31 %	13,72 %	4,40 %	1,91 %	0,00 %	
2021	10,80 %	57,51 %	20,45 %	10,31 %	0,92 %	0,01 %	
2022	8,62 %	53,04 %	19,79 %	17,79 %	0,73 %	0,03 %	
1-8/2023	5,96 %	41,00 %	20,02 %	32,43 %	0,56 %	0,02 %	(Aut.fi)

In the used car market diesel cars still play a significant role, diesel cars had a 36% share of the whole used car market. 110 000 used diesel cars sold in the year 2022. The most popular price range for diesel vehicles was 10.000-15.000 euros.(moottori.fi). Despite the high taxes for diesel passenger cars and relatively high costs of diesel fuel, diesel vehicles still remains a valuble asset in the used car market.

2.4 Petrol/Gasoline History, Gasoline Mercedes-Benz, Gasoline Car Taxation in Finland

2.4.1 Petrol / Gasoline history

In 1885 Gottlieb Daimler invented the prototype of the modern petrol engine, vertical cylinders and a carburator injecting gasoline to the cylinders and powering a two wheeled vehicle. A year after Gottlieb Daimler, in 1886 january 29th , Carl Benz received the worlds first patent for a gasoline propelled automobile. Patent number 37435.

In 1890 Wilhelm Maybach built the first four cylinder, four stroke engine in the world. The maybach engine was small, but light weight and powerful, Daimler took a stagecouch and turned it to the first four wheeled automobile. Daimler is the first one who invented a practical internal combustion engine which was powered by gasoline. Willhelm Dailer founded the Daimler Motoren-gesellschaft in 1890 to produce and manufacture Willhelm Daimlers Designs. 11 years later Wilhelm Daimler designed the first Mercedes Automobile(Mary Bellis,2019).

The first gasoline engine that was stationary unit was built by Carl Benz, it was a one cylinder and a two stroke engine unit. The first time the engine was running was in 1879 at new years eve. Carl Benz had so much success and business opportunities with the one cylinder engine, that Carl Benz could devote more time to hes dream to create a lightweight gasoline engined automobile. Carl Benz fullfilled that dream in 1886, it was a two seat vehicle with three wheels, the engines power output was 0.75 horsepower(Mercedes-Benz.com).

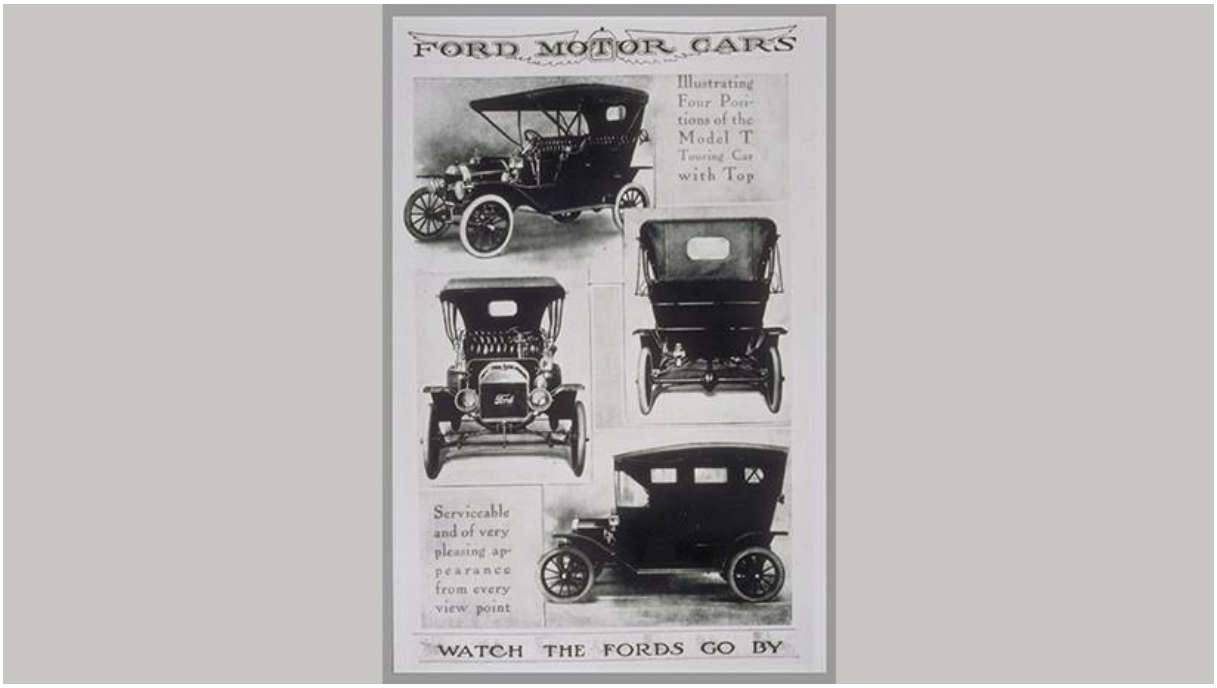
Henry Ford was the founder of Ford Motor Company, on June 16th 1903 the company was created with 12 other investors. The first investment was 28.000 dollars to form Ford Motor Company. In july 15th 1903 the first car was sold by the company. In 1906 Henry Ford became the president of Ford Motor Company and the controlling owner. 1919 was the year when Henry, Clara and Edsel Ford became the only owners of the company, the price of the acquisition was 105.820.894 dollars to buy all the remaining stocks of the company from the remaining shareholders.(corporate.ford.com).

The Ford Motor Company has a place in motoring history mainly because of the Ford Model T. There were eight other car models before the famous Model T. The Ford model A, B, C, F, K, N, R, S were the eight other models before the model T. The production of the model T was started in 1908 and introduced to the world in the same year of 1908 (Britannica.com). Henry Ford wanted the model T to be affordable, durable and simple. Model T was one of

the first mass production vehicles in the world, Henry Ford set a goal to produce the universal car to the whole world. Model T was produced in Highland Park production line, in Michigan, The Michigan plant was revolutionary at the time. Ford Motor Company sold the model T between 260 dollars and 850 dollars per car to the buying customer. The car had a steering wheel on the left side of the car, the ease of getting in to the vehicle for the customers was a highlight, the model T also featured the engine block and crankcase casted as a single unit, model T was the first car to have a removable cylinder head, vanadium steel was the key to these features. Vanadium steel was light and strong which was crucial for developing the engine parts of the model T. The car had a manual transmission which was easy to use, the gasoline tank was located under the passenger front seat, windshields were optional in the early model T's, but were standardisized later on to the Ford model T. The car had to be started via a crank, located in the front of the car and the crank connected to the crankshaft of the engine by turning the crank the engine would start. The only color for the model T was black which was offered from 1914 to 1925, after 1925 the vehicle could be purchased in various colors that the customer could choose when purchasing the car.

More than 15.000.000 were built and sold world wide, the production of the Ford model was stopped in May of 1927. The Model T's low price point was crucial for the succes of the car, the car made owning a car possible for many people and marked a succes for the gasoline engine powered vehicles for the future(Corporate.ford.com).

Ford Model T in the picture below (corporate.ford.com).



2.4.2 Gasoline taxation

The taxation in Finland regarding gasoline vehicles, including Mercedes-Benz gasoline vehicles, are the least car taxed of all the various drivetrains. For a gasoline vehicle the owner has to pay a basic car tax for the gasoline vehicle. The basic car tax is calculated by the weight of the vehicle or by the CO2 emissions the vehicle releases. The basic car tax which applies by the vehicles weight, the vehicle has to be older than January 1st 2001, the basic car tax that is based on the CO2 levels, the car has to be newyer than January 1st 2001. Gasoline vehicles are excluded from the motive power tax.

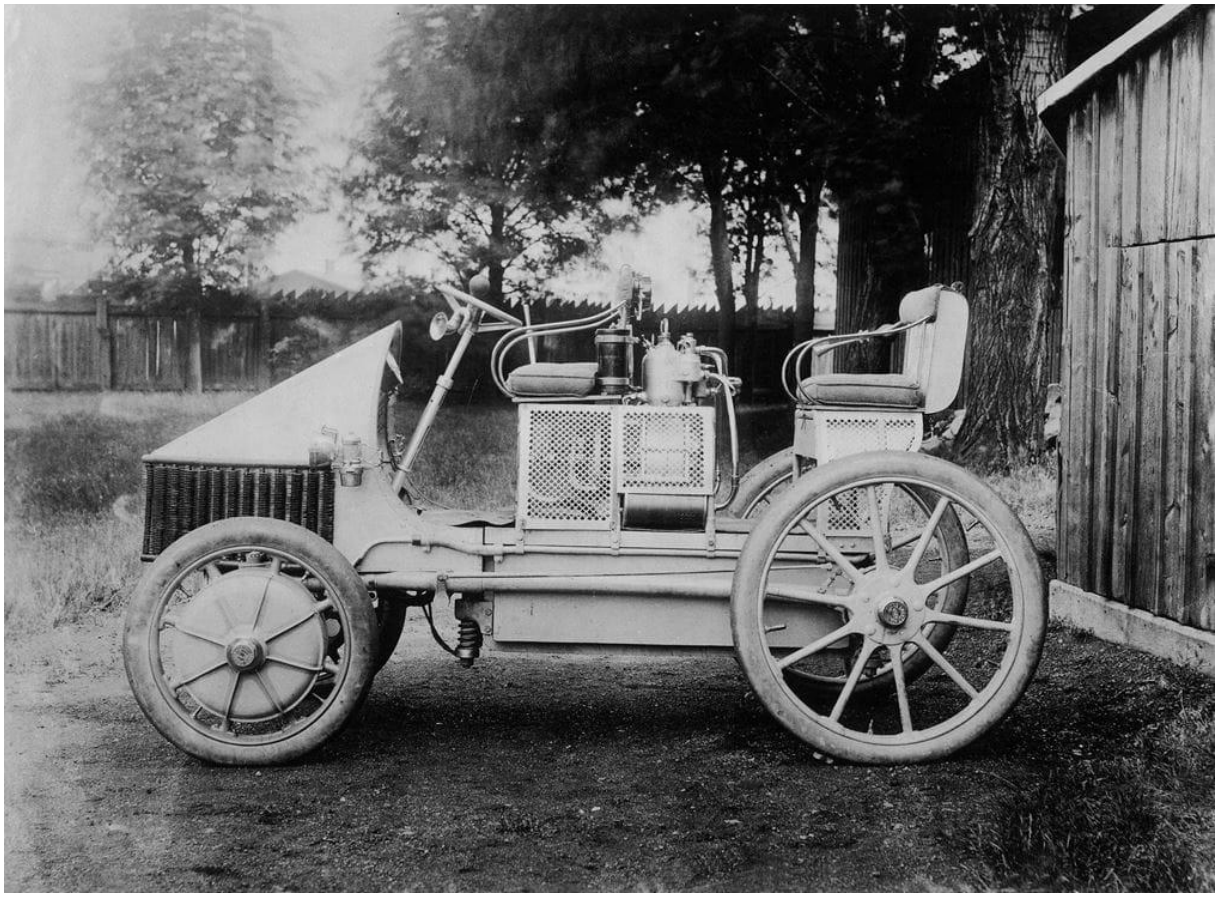
The tax amount when comparing gasoline vehicle owner versus a diesel vehicle owner, the diesel vehicle owner is obliged to pay over five times as much taxes compared to the gasoline vehicle owner. The diesel vehicle owner is obliged to pay a motive power tax fee of 5.5 cents for every hundred kilograms of the vehicles weight, per day. 365 days a year, if the diesel vehicle is registered all year round(veronmaksajat.fi).

2.5 Hybrid Car History, Hybrid Mercedes-Benz, Hybrid Vehicle Taxation in Finland

2.5.1 Hybrid Car History

The first hybrid car was designed and produced by Ferdinand Porsche & Ludwig Lohner, the vehicle was called the Semper Vivus. Semper Vivus was a prototype vehicle, the vehicle was unveiled in 1901. The vehicle had a gasoline combustion engine plus a generator that sent a charge to the wheels. ¨Semper Vivus¨ in latin means – ¨forever alive¨ (Porche.com)

Semper viwus(Porsche.com)

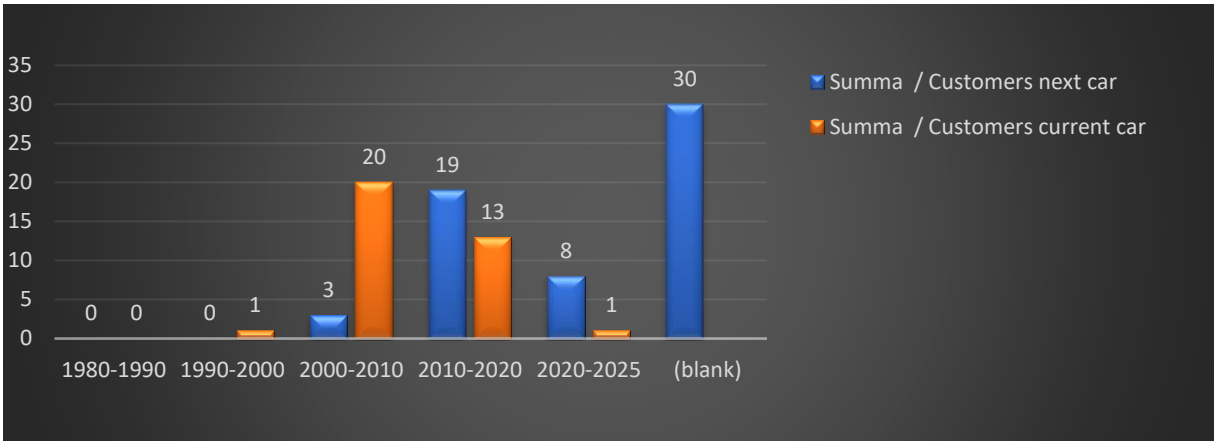


2.5.2 Hybrid Vehicles Taxation

Hybrid vehicle taxation in Finalnd. Hybrid vehicles in Finland have the motive power tax, the taxation is based on the power train, petrol hybrid or diesel hybrid. Petrol hybrid has the lowest motive power tax 0.5 cents a day per 100kg of the cars overall weight, diesel hybrid has 4.9 cents a day per 100kg of the cars overall weight. In this case aswell diesel has more taxes, significantly(veronmaksajat.fi).

Hybrid vehicles were not that popular in this questionnaire, due to the most popular age group of the cars 2010-2020, the hybrid car lineup from Mercedes-Benz was not at the same level as today in 2023. The high repair costs of an older hybrid car might be a concern for customers, some of the people who aswered this questionnaire raised this as a possible concern plus the limited range of electricity of the older hybrid Mercedes-Benz vehicles were a concern.

Customers current car preference, customers next car preference



2.6 Electric Car History, Electric Mercedes-Benz, Electric Vehicle Taxation in Finland.

2.6.1 Electric car History

Electric cars have been around for over a hundred years. In the early days of automotive innovation, there were three drivetrain options battling for dominance. Petrol, Electric and Diesel. Petrol and diesel powered vehicles were the winners for over a hundred years, the times are changing and Electric drivetrains are the winners in todays world of automotive innovation and production at the moment(Nigel Burton,2013).

The first electric vehicles were horse carriages with electric motors and batteries bolted to the carriage. Robert Anderson invented a carriage with a electric motor and a battery in the 1830's the exact year is unknown due to the loss of the documents on the exact date of this invention. The early batteries on these vehicles were not chargable, the battery cells had to be replaced to new battery cells to continue the jorney(Nigel Burton,2013).

In 1881 the first electric vehicle with a rechargable battery was introduced in France. The french inventor Gustave Trouve designed a three-wheeled vehicle, the vehicle was introduced to the public in the International Exhibition Of Electricity held in Paris. The inventor of the rechargable battery was a Belgian named Gaston Plante, Gustavo Trouve applied this innovation for the three-wheeled vehicle(Nigel Burton,2013).

In 1899 the worlds land speed record was broken with a electric vehicle, Camille Jenatzy was a Belgian civil engineer who loved car racing. He had a motto of ¨racing improves the breed¨¨. Camille Jenatzy raced his vehicles to garner attention and for advertisenment, racing was a good way show off the electric cars he created. Jenatzy raced he's electric racing car called the ¨La Jamais Contente¨ which traslates to ¨never satisfied¨ in april of 1899 at a speed racing event where the ''La Jamais Contente'' made Camille Jenatzy the fastest human being in a road vehicle. The top speed was 105 km/h. The La Jamais Contente had a cigar shaped body for aerodynamic supremacy and racing tires from Michelin. Camille Jenatzy was the first human to break the 100 km/h barrier. Camille Jenatzy continued he's racing career, Jenatzy raced different car racing brands, including Mercedes in 1903(Nigel Burton,2013).

¨La Jamais Contente¨ in the picture above(Michelinchallengedesign.com)

Camille Jenatzy was killed in 1913, he was a man of humour and he had a sense of humor in practical joking. He was shot by he's hunting party member in a hunting trip. Jenatzy hid behind a bush near the cottage the hunting trip members were staying in and started making wild boar noises, one of the hunting party members was scared and shot in to the bush where Camille Jenatzy was hiding and imitating a wild boar. Camille Jenatzy was mortally wounded in the woods of the Ardenne forest, it was the last practical joke the man ever arrenged to he's friends(Nigel Burton,2013).

Electric cars were popolar with rich individuals in the end of 1800'th century aswell as today, but the electric car or vehicle became a popular way for transport as a taxi cab. In 1894 Henry Morris and Pedro Salom created a electric vehicle in two months. It was a horseless electric motor powered carriage. Henry Morris was a mechanical engineer, he had a design idea based on he's previous work he did in a battery powered tram manufacturing company. Henry and Pedro took a motor from a boat that was modified, the electric cab had a lead-acid battery, it was installed as low as possible to the vehicle. The vehicle emulated a

horsecarriage, but it ran on electricity. The vehicle was called the ¨electrobat''. The vehicle was sort of a prototype, it was rudimental and basic, but it was a good vehicle to start with. It had a 80km touring range and the top speed was 24 km/h(Nigel Burton,2013).

Henry Morris and Pedro Salom had to have a special permit from City hall to drive the vehicle and conduct business with it. The first test ride was 31st of August 1894, that was the same day Morris and Salod filed the patent on the vehicle(Nigel Burton,2013).

(Woodlandsphilia.com)

Morris and Salom electric road wagon of 1896 ('Scientific American')

Henry Morris and Pedro Salom started Morris & Salom Electric Carriage and Wagon company in 1896. The two men refined their invention and made it more suitable for all year round usage.In 1897. There were some electrobats in use in New York city, New Yorkers called the electrobat taxidrivers 'lightning cabbies'. The charges (prices for commuting) for

the electric taxis were the same as horse driven carriages. The taxis were a carrying over 1500 passengers per month in New York and coverin over 7000km of distance in the city. The business expanded and made it's way to Europe, Paris and London were the new destinations for the taxi business(Nigel Burton,2013).

Morris and Salom sold the company 27th of september in 1897 to a lawyer named Isaac Leopold Rice, Rice renamed the company to The Electric Vehicle Company. Rice was lawyer by education, he's early business ventures were to buy promising patents and selling them with a profit. Isaac Rice had many patents on battery technology businesses, he had almost total control of the battery producing business in the United States of America. Isaac Rice then had ample supply of batteries for discounted prices to the electric vehicles, The Electric Vehicle Company was producing. Rice formed the headquarters of the taxi operations to an old indoor cycling rink, the building had two floors where the company could store 200 battery packs and around 100 electrobat taxis. The new headquarters had their own electric generator, to recharge the batteries and to power the vehicle elevators between the two floors. Isaac Rice also bought Consolidated Rubber Tire Company to have a supply on cheaper tires for the electrobats. The vehicles were heavy and due to the weight the vehicles consumed the tires fast. (Nigel Burton,2013).

The electobats were constantly upgraded or improved to the point that the maintanence became challenging, the models were so different that the spare parts including the batteries were not interchangable to the new variations of the electrobat vehicles. That brought problems on maintaining the fleet and problems for spare part supply(Nigel Burton,2013).

The electrobat drivers were ordered to come to the headquarters for every 16 to 20 kilometres to get new battery packs for the vehicles. The vehicles were the EVC's (The Electric Vehicle Company) assets that meant the drivers did not take care of them as their own vehicles which meant looking after and maintaining the vehicles properly was not common. One of the main factors regarding maintanance on the eletrobats was most of the drivers did not have any experince on electric vehicles so the drivers did not know the nuances of keeping the vehicles on the road. Battery maintanance was often neglected by the drivers on the electrobats which lead to high battery failure rates for the company(Nigel Burton,2013).

The electrobats showed their brilliance in december of 1897 when New York was hit by series of blizzards, the cold weather continued to january of 1898. Horse-drawn cabs could not operate in snowy and icy weather, the electrobats on the otherhand could cope with cold and snowy conditions. This capabilty of the electrobats would lead to an important encounter

with a person who would be a vital contributer,considering the companys future(Nigel Burton,2013).

William C. Whitney was a Businessman, lawyer and a politician. Whitney was impressed with the capability of the electrobat fleet in the harsch contidions of winter and saw potential in The Electric Vehicle Company a.k.a EVC. Whitney had a investing group that would consists of powerfull men, wallstreet financier Thomas.F.Ryan, Peter A.B Widener who was the former city treasurer of Philadelphia Pensylvania. February 21st of 1899 William C.Whitney made an offer to Isaac Rice which Rice accepted. Electric Vehicle Transportation Company was formed by Whitney and he's group of powerfull business partners. Vehicle Transport Company rapidly expanded their operations to Chicago, Boston and Philadelphia, the company was facing competion from Anglo-American Rapid Vehicle Company which forced the company to expand quickly(Nigel Burton,2013).

Colonel Albert Pope was a bicycle manufacturing company owner, Pope's company would produce around 250.000 bicycle's annually. Albert Pope saw a future with electric vehicles and was keen on joining the electric vehicle manufacturing business. Whitney and the investors brokered a deal with Pope in a hope to produce electric vehicles with Pope. Columbia Electric Motor Carriage was formed alongside with EVC(The Electric Vehicle Company). Albert Pope once famously said ¨Who would willingly sit on top of a explosion¨ when he saw an internal combustion engined vehicle in Paris, France. Pope trusted one of the brightest engineers in hes company to design a electric vehicle, the engineer was Hiram Percy Maxim. Maxim saw a future with internal combustion engines aswell as electric vehicles(Nigel Burton,2013).

Percy Maxim had a working electric vehicle prototype by april of 1897. In may of 1897 the company sold the first electric vehicles, it was a date Albert Pope set for the company to aim at. The Columbia Electric Motor Carriage company's factory was located in Hartford, Connecticut. Columbia Electric Motor Carriage was the first electric car producing consolidated company. The factory produced hundreds of cars between 1897 and 1899 to the North American market and for import purposes to overseas markets. In 1900 the company sold every electric car the company produced(Nigel Burton,2013).

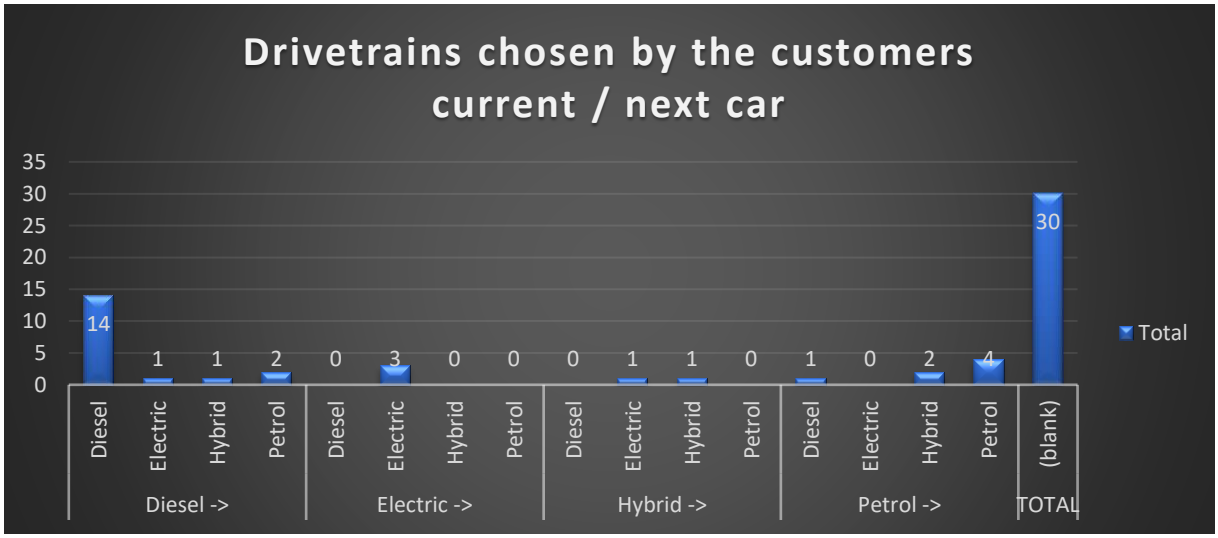
Columbia Electric Motor Company with EVC, bought other businesses to expand the companys operations. The company bought New Haven Carriage company and the factory alongside the whole capital stock of company. Siemens and Halske Electric Company of America was the next business to bought by Pope and EVC to supply the electric car business for the necessary electric components the business requires. The idea for the these

mergers was to gain production capabilites to the future of the company. Whitney and Pope had a vision to produce electric cabs, light trucks, buses and wagons in the future. The vision was ambitious, but troubles were in the horizon. Allthough the company was generating thousands of orders on electric cars, the company had bought Riker Electric Motor Vehicle company in 1900 which lead to the expansion of car models available for customers to order.

Running costs of the company was higher than expected, the electrobat cabs needed regular battery changes and the battery packs had high failure rates among the electro cab fleet which led to high costs(Nigel Burton,2013).

The downfall of the electric vehicles at the time were the limited range compared to the internal combustions engine vehicles which could run for hours at the time. Electric vehicles were compatable for short distances, but internal combustion engine vehicels could manage short and long distances(Nigel Burton,2013).

Drivetrains for current customer car, drivetrains for next customers car



2.6.2 Electric Car Taxation

Elecric car taxation in Finland, electric cars do not have a regular car tax, electric cars have a basic tax that was 53.29 euros annually. After this date 1.10.2023 the basic tax will be 118,26e per year for electric vehicles, zero emission vehicles are free of the car tax, but have a basic tax instead(veronmaksajat.fi).

3 Methodology

3.1 Purpose of the research and background

The purpose of this research paper was to map the Mercedes-Benz customers next Mercedes-Benz vehicles preferred drivetrain, Diesel. Petrol, Hybrtid or Electric. The idea was that this data would be available for use in various instances in the Automotive sector.For example this data can be used by a car sales company, to see what kind of Mercedes-Benz cars are the customers looking for at the moment, especially what would be the preferred drivetrain option for the customers. This research paper can be used for a Mercedes-Benz service, where the company can see what kind of Mercedes-Ben cars could be coming to use the companys services, what kind of spare parts could be needed in the inventory at any given time.

This research idea was relevant because of the current state of the automotive industry in Finland, to be precise in Tampere, Pirkanmaa. The Russo-Ukranian war caused the fuel prices to soar and electric cars are more common in the roads in todays Tampere region. Would the high fuel prices make the customers to search for a electric or a hybrid variant of a Mercedes-Benz ? Or are the internal combustion engine variants still the most favored models and drivetrains ? This is what the research paper is looking to investigate and find data and aswers fro the topic.

3.2 Research Methods

This research was done with a Quantitive research method. Quantative methodology is a reasearch framework in social sciences. It is a set of strategies, technigues and assumptions used to research, phychological, social and economic causes through exploring numeric patterns. Quantative research gathers various ranges of numeric data(uta.edu).

The collection of quantative data will allow researchers to perform simple or sophisticated statistical analysis to gather the data needed for the research. Quantative research incorporates methodologies such as questtinonares, observations or experiments and stands in contrary to qualitative research(uta.edu).

The purpose of quantative research is to gather knowledge and offer understanding about social world we live in. Quantative research method is utilized by social scientist, communication researchers to observe phenomena or chances affecting people. Social

scientists study people. Quantative research is a way to study about a particular group of people the research identyfies, also known as sample population. Quantative research relies on the data that is gathered to examine the sample population. Quantative research uses questionnaires, structured observations to gather the data for the research(uta.edu).

3.3 Questionnaire, research, data collecting

In this research paper the author used a questionnaire for a quantative research methodology base, the questionnaire approach was a simple but effective way to gather the data needed for this research. It was easy for the participants to circle the answers in the quastinnionare paper and easy for the author to gather, analyze and compare the data. The questionnaire included questions regarding Mercedes-Benz customers current vehicle drivetrain(Diesel,Petrol,Hybrid,Electric), year model, body shape and the same questions about the customers desired successor Mercedes-Benz vehicle and is the next vehicle a new or used one. The goal was to map the Mercedes-Benz customers next Mercedes-Benz vehicle preferences, does the customers current car have an influnce on the next Mercedes-Benz vehicle and more precisely the drivetrain of the vehicle. Has the energy crisis had a influence on the internal combustion engine vehicles popularity? Or has the electriced versions taken a lead ? these questions needed answers.

The goal was to get atleast 30 answer for the research, the data collection was conducted with a questionnaire on a A4 paper, on which the participants circled answers for the questions displayed in the questionnaire. As already said above the questionnaire included questions about the customers current Mercedes-Benz, what is the year model of the vehicle, on which power does it run, what is the body type of the vehicle. The participants also answered the following questions, what is the desired year model range for the next Mercedes-Benz, on what power does it run and what kind of body shape it is ? The author also gathered the ages and genders of the participants. The goal of 30 answers were reached and the data collection was finished. The gathered data was then exported to Microsoft Excel to analysis.

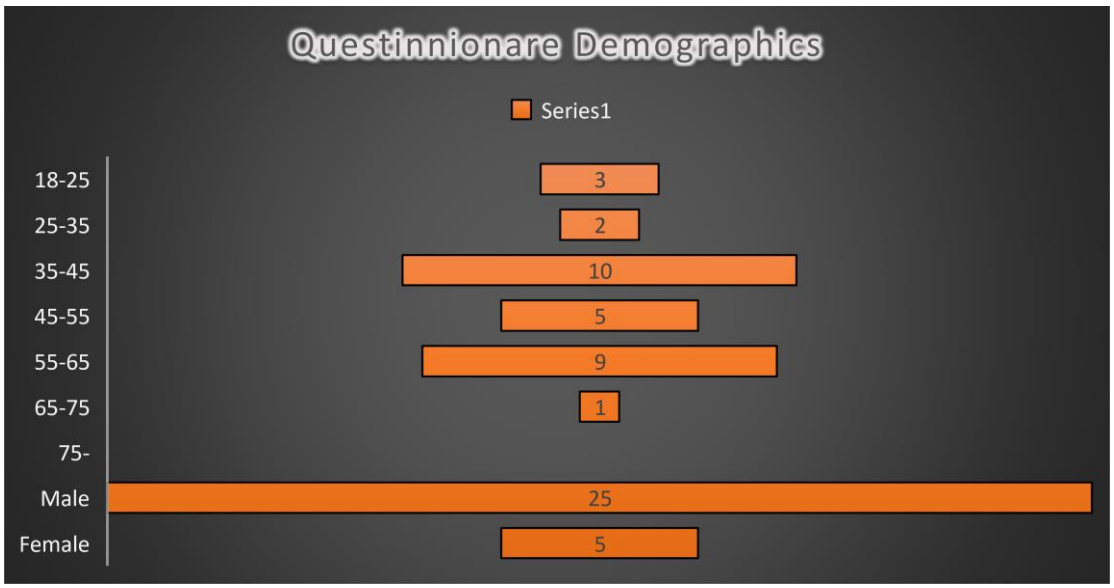
The data was collected in M.Vänttinen Oy, which is a Mercedes-Benz service in the Tampere Metropoltian area. M.Vänttinen has over 40 years of experince in servicing and repairing Mercedes-Benz vehicles and has a broad customer base. The broad customer base was the main reason why the data was collected in M.Vänttinen Oy, there were plenty of potential participants for the data collection, questionnaire. It was the right choice, the data collection was succesfull.

4 Results

4.1 Results from the questionnaire

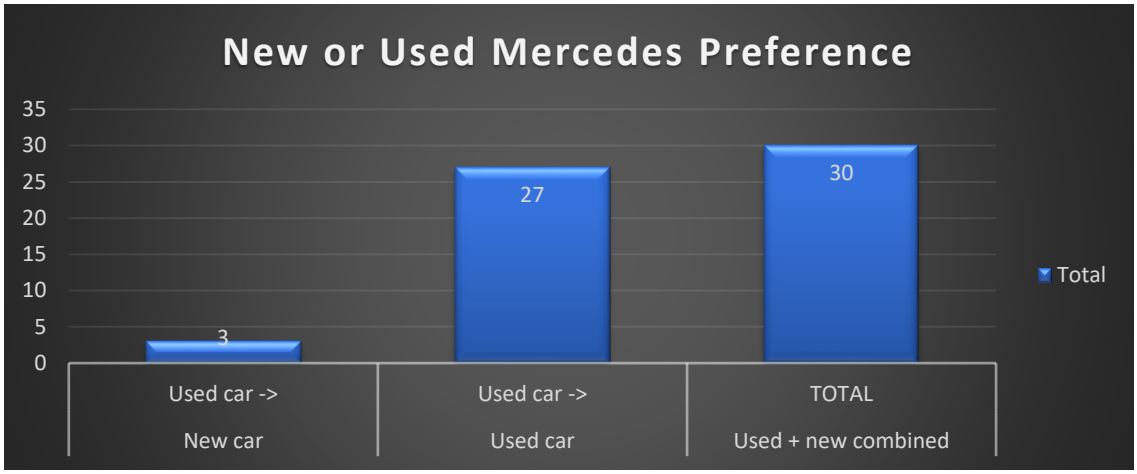
The questionnaire goal was to get 30 participants answering the questions, that goal was reached and the research got 30 participants. Most of the responders were Male and in the small minority was female participants. The demographic of the male participants was 25 out of 30 that is a 83% of the whole demographic, the female participant demographic was 5 out of 30, that is a 17% of the whole demographic of the questionnaire. The age of the participants were also asked in the questionnaire to gather data about the age of the participants. The age groups goes as follows 18-25 year old, there were 3 participants (10%), 25-35 year old, there were 2 participants (7%), 35-45 year old, there were 10 participants (33%), 45-55 year old there were 5 participants (17%), 55-65 year old, there were 9 participants (30%), 65-75 year old there was 1 participant (3%) and none of 75- old particpants (0%).

Questionnionare Demgraphics



Question: Is the participant searching for a new or used vehicle for hes or hers next car? It was as follows: 27 of 30 participants were searching for used vehicle to replace the current vehicle he or she owns, that is 90%. Only 10%, 3 participants were looking for a new Mercedes-Benz vehicle to replace the current vehicle he or she owns.

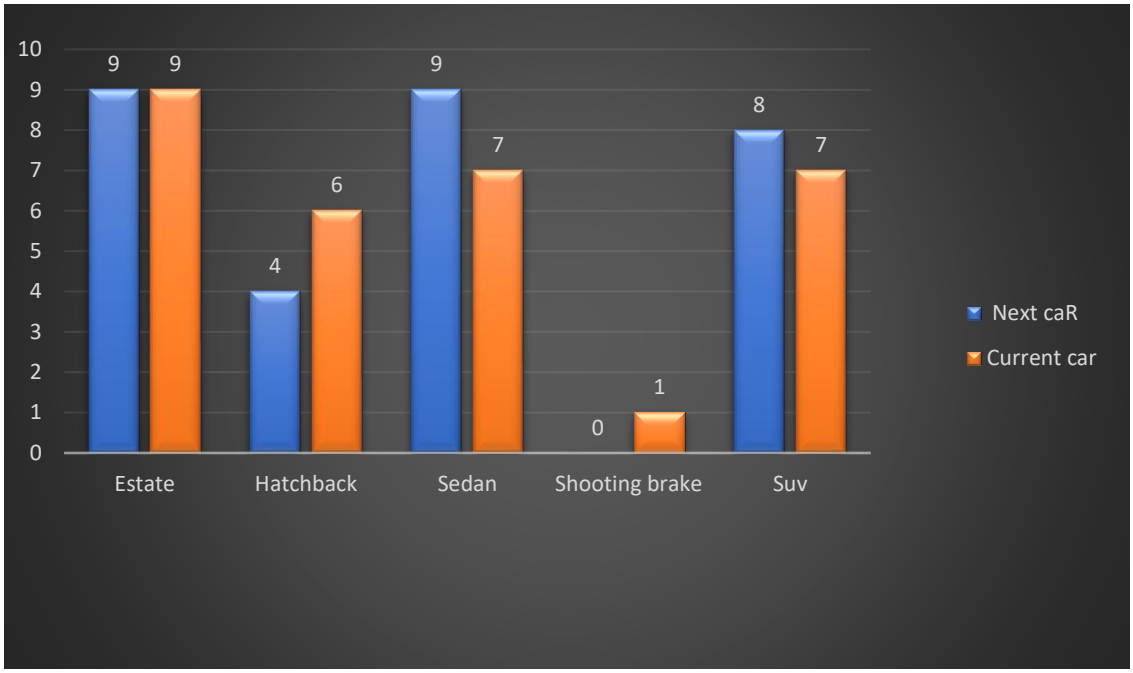
New or used Mercedes-Benz preferences



Question: What is the participants **current** cars bodyshape ? Estate cars were the most popular 9 of 30 particpants had a estate car (30%), Sedan and SUV were the second most popular, both body styles had 7 out of 30 participants owning one (23,33% x 2) Hatchbacks were the third most popular choice 6 out of 30 participants had a hatchback (20%) One participant had a Shooting Brake body styled vehicle (3%)

Question: what is the participants **next** cars bodyshape? Both Sedan and Estate had 9 participants selecting one or the other (30% x 2) SUV was the second most popular choice for the next cars bodystyle 8 of the particpants selected SUV (26.66%) Hatchback was the third most popular choice 4 of the 30 participants selected hatchback as their desired bodystyle (13.33%) Shooting brake came in fourth with none of the participants choosing the body style as a desired selection (0%).

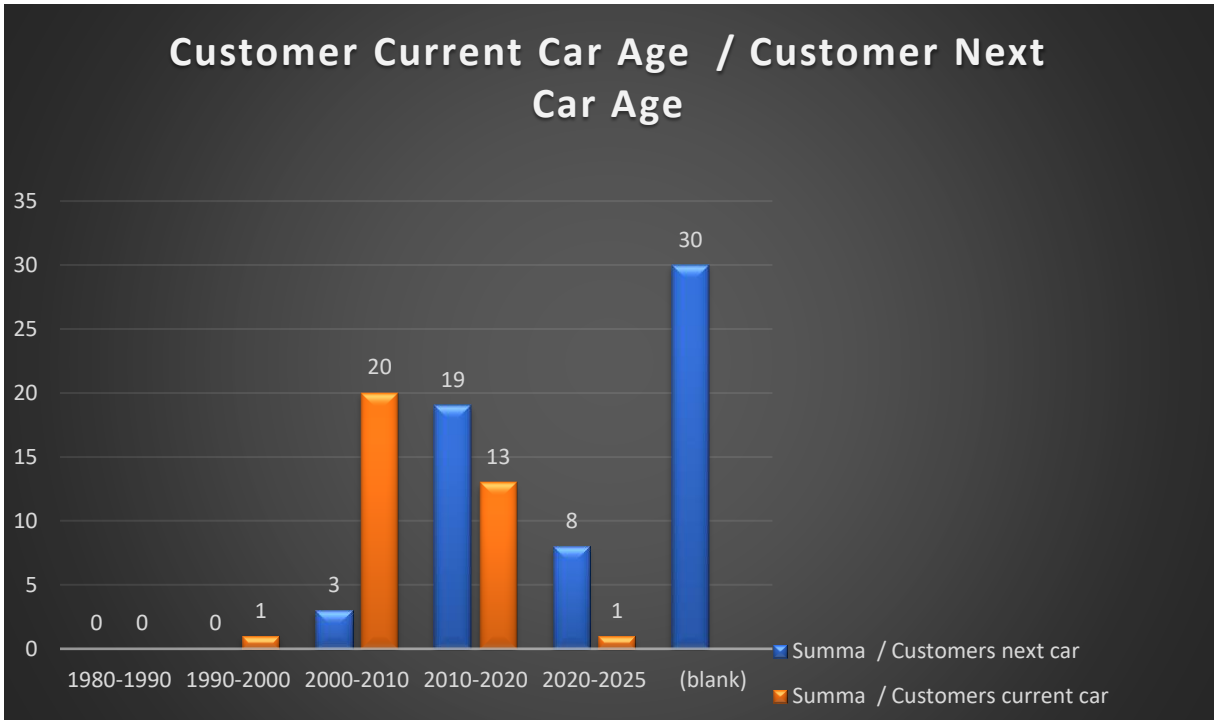
Mercedes-Benz bodyshape preferences, current car / next car



Question: What is the participants current vehicle age group and what is the next vehicles age group. **First** the current car year group, year 1980-1990 had zero (0%) answers from participants, year 1990-2000 had 1 (3.33%) answer, year 2000-2010, had 20 (66.6%) answers from the participants and was the most popular choice, year 2010-2020 had 13 (43.33%) answers and was the second most popular choice, 2020-2025 had 1 (3.33%) answer, so it was a tie with 1990- 2000.

Second the participants next Mercedes.Benz vehicles preferred age group, year 1980-1990 had zero answers from participant (0%), the same answer was with, year 1990-2000, zero answers (0%), the third most popular choice for the participants next cars age goup is, year 2000-2010, 3 participants(10%) is looking to buy a car from this age group, the most popular choice for the participants next vehicles age group was, year 2010-2020, 19 (63,33%) participants chose this age group to be most desired fro them, the second most desired next car age group was 2020- 2025, 8 (26.66%) of the participants was looking for a Mercedes-Benz from this age group.

Mercedes-Benz customers preferred car age groups, current car / next car



Question, what is the participants current Mercedes-Benz vehicles drivetrain and what is the participants next Mercedes-Benz vehicles preferred drivetrain ? The drivetrain options were, Diesel, Petrol, Hybrid, Electric.

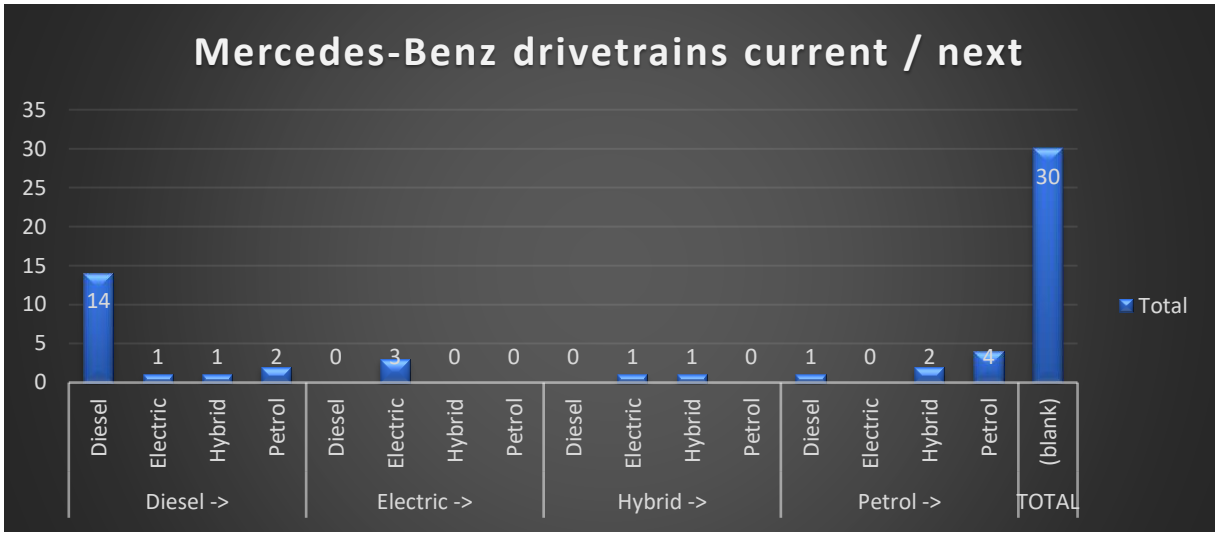
Diesel was the most popular drivetrain for the participants current vehicle drivetrain option 18 out of 30 participants had a diesel (60%) and the most popular for the next Mercedes-Bernz vehicles drivetrain option, 14 participants out of 30 was going to buy a diesel Mercedes-Benz for their next vehicle(46.66%). Four of the current diesel Mercedes-Benz owners wanted to change the vehicles drivetrain, 2 participants wanted to buy a petrol Mercedes-Benz vehicle, one wanted to buy a hybrid Mercedes-Benz and one other wanted to buy a electirc Mercedes-Benz vehicle.

Petrol was the second most popular drivetrain in the current Mercedes-Benz owners section, 7 out of 30 particpants had a petrol Mercedes-Benz(23.33%). Four of them wanted to buy a petrol Mercedes.Benz in the future, two of them wanted buy a hybrid Mercedes-Benz and one particpant wanted to buy a diesel Mercedes-Benz vehicle.

Electric vehicles were the thrid most popular drivetrain in the current vehicle option, 3 out of 30 particpants had a electric Mercedes-Benz (10%) all of the electric Mercedes-Benz owners wanted to buy a electric Mercedes-Benz as their next vehicle.

Hybrid drivetrain was the fourth most popular drivetrain option, 2 out of 30 had a hybrid Mercedes-Benz vehicle(6,66%) One of them wanted to buy a electric Mercedes-Benz as their next vehicle and the other one wanted to buy a hybrid Mercedes-Benz as their next vehicle.

Mercedes-Benz customers drivetrain, current car / next car



4.2 Analysis of the data

Out of the data, the author can see that nearly all of the participants in the questionnaire were males, 83 % infact and the rest 17% were female participants. The results for this data was as expected, the majority of the customers in M.Vänttinen are male customers and female customers are in the minority.

Majority of the participants, 27 out of 30, were looking for a used Mercedes-Benz which was not a surprise because most of the M.Vänttinen customers drive a used Mercedes-Benz, some of the customers services their new Mercedes-Benz at M.Vänttinen, but they are in the minority. Only 3 out of 30 was looking for a new Mercedes-Benz.

The bodyshape question was interesting, many of the car makers have invested heavily in SUV production and development, it was interesting to analyse the data and see what the results are. The results were that the most popular bodyshape was the estate and sedan

version of Mercedes-Benz vehicles 9 out of 30 participants wanted or owned a estate or a sedan. SUV bodyshaps came in second place 8 out of 30 wanted a SUV, the SUV body ranked in the top two is not a surprise, it was expected to be in the most poplar bodyshapes. It was interesting that sedan bodyshape was a tie with estate bodyshape in the top spot of the questionnaire.

Hatchback were the third most popular bodyshape 4 out of 30 wanted a hatchback for their next car and 6 out of 30 already had one. Mercedes-Benz has offered a hatchback since the late 1990's and you see plenty of them in the roads in the Pirkanmaa region as well as in the service of M.Vänttinen Oy. Shooting brake finished last in the bodyshape question with none wanting to buy one nest and only one participant owned one at the moment, only a handfull of shooting brake models have been produced by Mercedes-Benz since the start of 2010¨s till thisday.

The Mercedes-Benz vehicle age questions results were as expected by the author, the most popular car range was 2000-2010 in the customers current car section, Mercedes-Benz offers a various models in this age group and especially the most popular bodyshapes, estates, sedans and SUV bodies. 2010-2020 was the most popular age group in the participants next car age, in this period Mercedes-Benz offers a variable bodyshapes and variable drivetrains for customers in the used car market. There are plenty of estates to choose from, the same goes with sedans and SUV models of the Mercedes-Benz vehicle range in this age range 19 of 30 participants chose 2010-2020 as their choice. 2020-2025 was the second most popular age group option for the next Mercedes-Benz vehicle the participants were interested of buying. In this age group there are various Mercedes-Benz bodyshapes available and various drivetrain available, petrol,diesel,hybrid and electric, 8 out of 30 chose this age group.2000-2010 was third most popular age group option for the participants when considering their next Mercedes-Benz. 3 out of 30 chose this age group as their next Mercedes-Benz vehicles preferred age.

Mercedes-Benz drivetrain choises for the participants were diesel,petrol,hybrid and electric for their current and future Mercedes-Benz vehicle. The most popular drivetrain was diesel.18 out of 30 had a diesel Mercedes-Benz as their current vehicle and 14 out of 30 was going to buy a diesel Mercedes-Benz as their next vehicle. Diesel Mercedes-Benz vehicles have been a popular choice for Mercedes-Benz owners and this is a proof of it. Mercedes-Benz has a variable range of diesel engines in their car lineup, this has been the case for atleast 40 years now. The second most popular drivetrain choce was petrol, 7 out of 30 had a petrol Mercedes-Benz as their current vehicles and 4 of them are interested of buying a petrol Mercedes-Benz in the future. Electric was the third most popular drivetrain in this

questionnaire, 3 out of 30 had a electric Mercedes-Benz and all of them were possbily wanting to buy a electric Mercedes-Benz for their next vehicle. Hybrid drivetrains were the fourth and least popular in this questionnaire, 2 partticipants had a hybrid Mercedes-Benz, one them wanted to buy a electric Mercedes-Benz for the next vehicle and the other one wanted to buy another hybrid Mercedes-Benz.

4.3 Restrictions of the research

The questionnaire was simple and the and volume of aswers (30 participants) was quite small to do a comprehensive research on the topic, to have a comprehensive research paper, there has to be hundreds of answers to give a bigger picture of the topic. The 30 answers gives this research a hint of what are the preferences of Mercedes-Benz owners at the moment, when they are trying to select their next Mercedes-Benz vehicle.

An interview would have been a valuable information asset for this research, it could have given more insight to why the owners chose a particular answer in the questionnaire. A interview would have given more depth to this research paper aswell, meaning the participants would have given answers that the author would not have been anticipating before hand, that would have been interesting to evaluate the data.

This kind of data collcection research usually involves lots of time to gather the data, but in this case the data collection was brief which also did limit the volume of answers for the questionnaire. Time limitation was a restriction on this research.

The author could have used the gender and age data to asses does etiher one have a correlation on the choices that the participants made in the questionnaire. What age groups preferred different drivetrains and what genders preferred certain drivetrains in the questionnaire.

This research found out about Mercedes-Benz customers prefernces in bodyshape,age and drivetrain, the participants gave their answers ,but the answer were not questioned, why did the participants choose these answers in the questionnaire. Not asking why is a restriction this research paper.

All the participants in the research were Finnish citizens, it would have been interesting to have some answers from foreign people living in Tampere Metropolitan area, what kind of Mercedes-Benz vehicles are they currently driving and what kind of Mercedes-Benz vehicle are they looking in the future and why.

5 Recommendations

The subject of this thesis requires research yearly or between 2 years to monitor the Mercedes-Benz customers prefences on what kind of Mercedes-Benz vehicles the customers are looking for. That ensures the viability of the data and will help the companies who are willing to the data for the advantage of the companys objectives. Data that is on date is necessary to monitor the Mercede-Benz customers vehicles prefenrences.

The questionnaire should be larger with more particiants participating in the research to give a more clearer image of the customer preferences, the data colloction should also use the gender and age data to give a more clearer image on what different age groups are looking for frm their next Mercedes-Brnz vehicle, this applies to the gender aspect aswell. Does male and female prefences vary and why.

6 Conclusion of the research

The purpose of this research was to map out current Mercedes-Benz owners preferences of their next Mercedes-Benz vehicle. What kind of bodystyle are they looking for ? what year models are the most attractive and what is most coveted drivetrain ? Diesel,Petrol,Hybrid or Electric.

These questions became relevant when the inflation was starting to rise, especially the energy sectors inflation. The petrol and diesel prices were nearly 2.50e per litre in Finland which caused people to look at electric and hybrid versions of cars to save money from the rising fuel prices. Also the fact that taxes are higher in the combustion engine models of cars, especially diesel vehicles, in this case diesel mercedes-Benz verhicles. Was the fuel prices and high taxation making people turn their backs on diesel and at even on petrol, allthough petrol taxataion is not that harsch compared to diesel vehicles. Mercedes-Benz customers were looking for bigger 4x4 SUV variants and the typical, sedan and estate versions still are preferred in Mercedes-Benz customers preferred bodystyle.

This thesis looked in to the history of the drivetrains in the theoretical part of the research paper, to give the reader a glimpse, where the car industry started and to give a hindsight why internal combustions engine variants have been in the fore front for so long, over a hundred years. The drivetrain variants f this research paper were diesel, petrol, hybrid and electric. We will also look at the taxation of all the drivetrains and how that might affect the customers choice when choosing the next Mercedes-Benz vehicles drivetrain. Mercedes-Brnz has a history of all the drivetrains in the research that is also covered in the theoretical part.

Inflation is cutting the Mercedes-Benz customers buying power,this research paper took a look in to the Finnish economy briefly, to see why the Mercedes-Benz customer buying power is dimishing at the moment. The Russo-Ukranian war is driving the energy inflation, Russia was a big energy importer in the European energy sector, but the war has changed that Russias energy imports have been dvindling down wards, the Europeans are seeking for means to purchase energy.

These factors in mind, a questionnaire was formed to gather data from Mercedes-Benz customers to try answer these questions. 30 participants took part for the questionnare, which is a limited number but will give some kind of hint what are the Mercedes-Benz owners thinking at the moment.

The most sought after drivetrain was diesel, a used diesel Mercedes-Benz, the inflation on diesel fuel did not hinder diesel Mercedes-Benz popularity, diesel cars are highly taxed in Finland, that did not affect the popularity of diesel Mercedes-Benz vehicles. Petrol drivetrain was the second most popular in the questionnaire, petrol prices were high but the taxation of petrol vehicles are far more forgiving than diesel vehicles. A petrol Mercedes-Benz is a good optioon for a person who is not comfortable with hybrid or electric drivetrains and if the person does not drive a lot in a year the costs of owning a petrol Mercedes-Benz is quite reasonable.

Electric variants of Mercedes-Benz vehicles came third, majority of the participants were buying a used Mercedes-Benz, used electric Mercedes-Benz vehicles are not that common in the used car market at the moment. Mercedes-Brenz electric line-up is quite new.

Hybrid Mercedes-Benz drivetrain came in the last place which was a bit of a surprise, there is quite a lot of hybrid Mercedes-Benz vehicles in the used car market, but the small size of the participants might be a cause for the hybrid drivetrain to finish last.

Sedan and estate variants of Mercedes-Benz vehicles was the most popular, SUV models were the second most popular, SUV variants of many of the car brands have been popular for some time, so it is not a surprise SUV Mercedes-Benz variants were near the top spot. Hatchback models of the Mercedes-Benz lineup came third and shooting brake models come in the fourth place of popularity.

It seems like in this research the car industry classics still hold their value in the Mercedes-Benz customers preference for their next vehicle, a combustion engined. Estate, sedan or a SUV model. Maybe in the future we will see a different outcome, when somebody else does another research paper of the topic

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Appendices

The questionnaire was conducted to gather data for this thesis. The idea of the questionnaire was map the Mercedes-Benz customers preferences for their next vehicle. The questionnaire was made to be anonymous, respondents cant be identified.

Mercedes-Benz Customer Car Preference:

Customers Current Car

New or Used Car

Powertrain : Diesel Petrol Hybrid Electric

Car Type : SUV Estate Sedan Hatchback Shooting Brake

Model:

Model Year : 1980-1990 1990-2000 2000-2010 2010-2020 2020-25

Customer Gender: Male Female

Customer Age: 18-25 25-35 35-45 45-55 55- 65 65-75 75-

Customers Next Car

New or Used Car

Powertrain : Diesel Petrol Hybrid Electric

Car Type : SUV Estate Sedan Hatchback Shooting Brake

Model Year : 1980-1990 1990-2000 2000-2010 2010-2020 2020-2025