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**RESEARCH OF EXPEDIENCY OF USE OF NEW AND KEPT CARS BY MEANS OF
MS POWER BI**

In today's very rapid conditions of technology development, automation of production, the introduction of robotics from time to time in the global market there are situations of reassessment of the value of skills, knowledge, products, services and more. Example. The development of electric vehicles has a significant impact on the environment, efficiency and reliability of transport technologies and forces manufacturers to reconsider the feasibility of producing internal combustion engines. The growing environmental requirements for modern cars in the world community are forcing owners to buy cars that are much more environmentally friendly, safer, easier to use, and do not require constant maintenance. This vision of world realities has another side of the car fleet. As is well known, there is a secondary market for cars and, accordingly, countries with high environmental standards prohibit or restrict the operation of such equipment that does not meet environmental standards. Such equipment is later resold to other countries and is dangerous to the world. An example is Germany, which has banned the use of diesel cars that do not meet EURO-environmental standards. Accordingly, some of these cars immigrated to the countries of the former Soviet Union.

So, taking into account modern realities, environmental standards, car manufacturers, and much more will be researched and taken into account in this paper.

Keywords: cars, analytics, electric cars, efficiency, ecology, efficiency, Ms Power BI.

Main part. It is well known that there are a number of factors for choosing a car that affect the preference of a particular model. For example: economy, practicality, reliability, comfort, prestige, or just a desire to stand out from other owners. Unequivocally, one of the first factors is cars that surround people in cities and are an example of buying such a car, in other words, live advertising. For example, taxis are always trying to buy cars that are reliable, economical and more or less prestigious.

So the first factor we will determine will be the rating of cars in Ukraine. For the research we use Microsoft Power BI software and open sources of information of official state bodies of registration of motor vehicle owners.

We will receive data from the resource <https://data.gov.ua/> and the section "Information about vehicles and their owners". The database contains one and a half million records, which include car model, brand, registration date, color, registration name, unique vehicle identifier number (VIN), license plate, place of registration and much more.

Let's build on the obtained data DashBoard (graphical representation of information) and determine the types of cars that are most common in 2021, Fig.1.

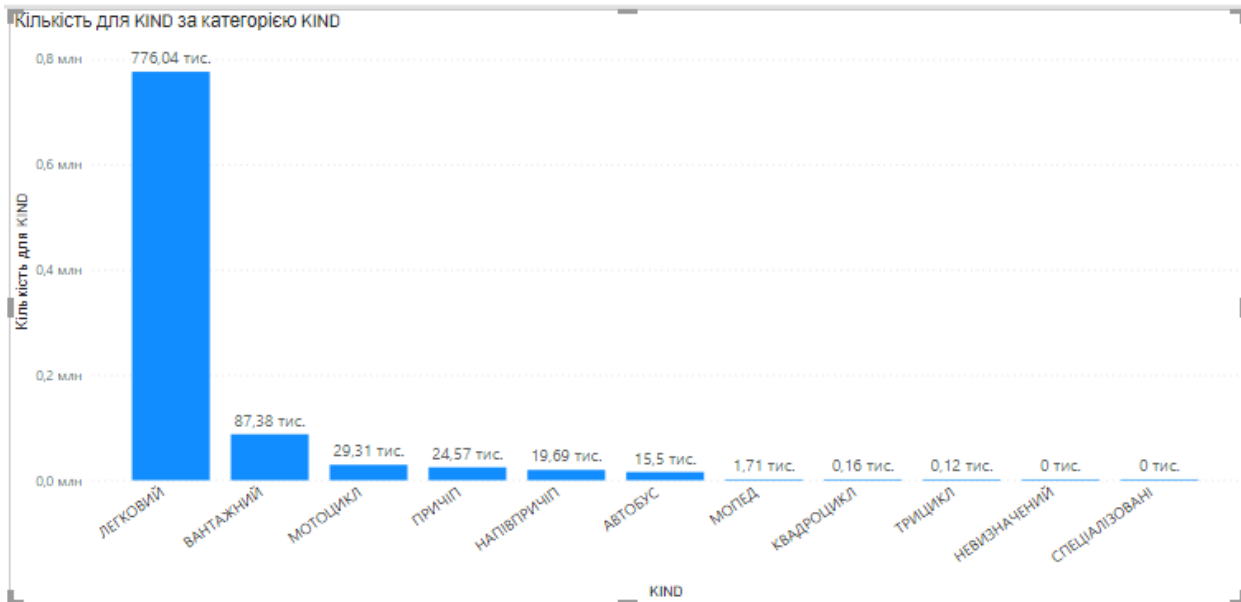


Fig.1. Analytics of vehicles by type

Let's define brands, models, years of release of cars which meet most often.

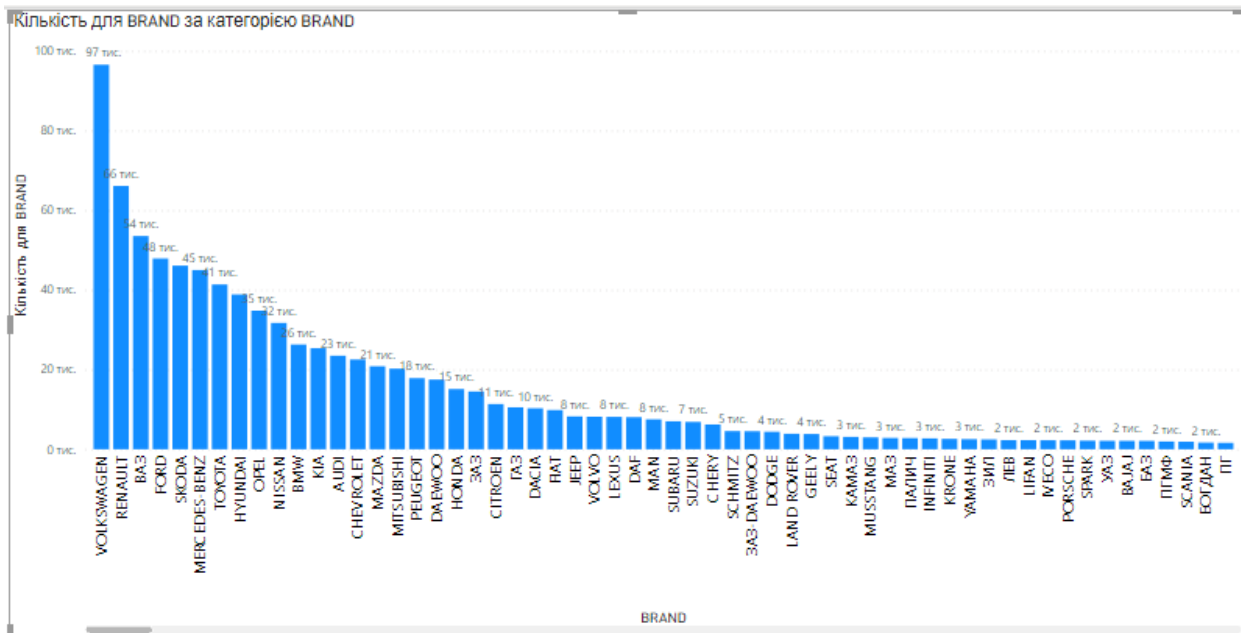


Fig.2. Rating of car brands

Accordingly, Fig. 2. The most popular cars are Volkswagen, Renault, VAZ and others. For example, let's analyze in detail the Volkswagen brand Fig.3.

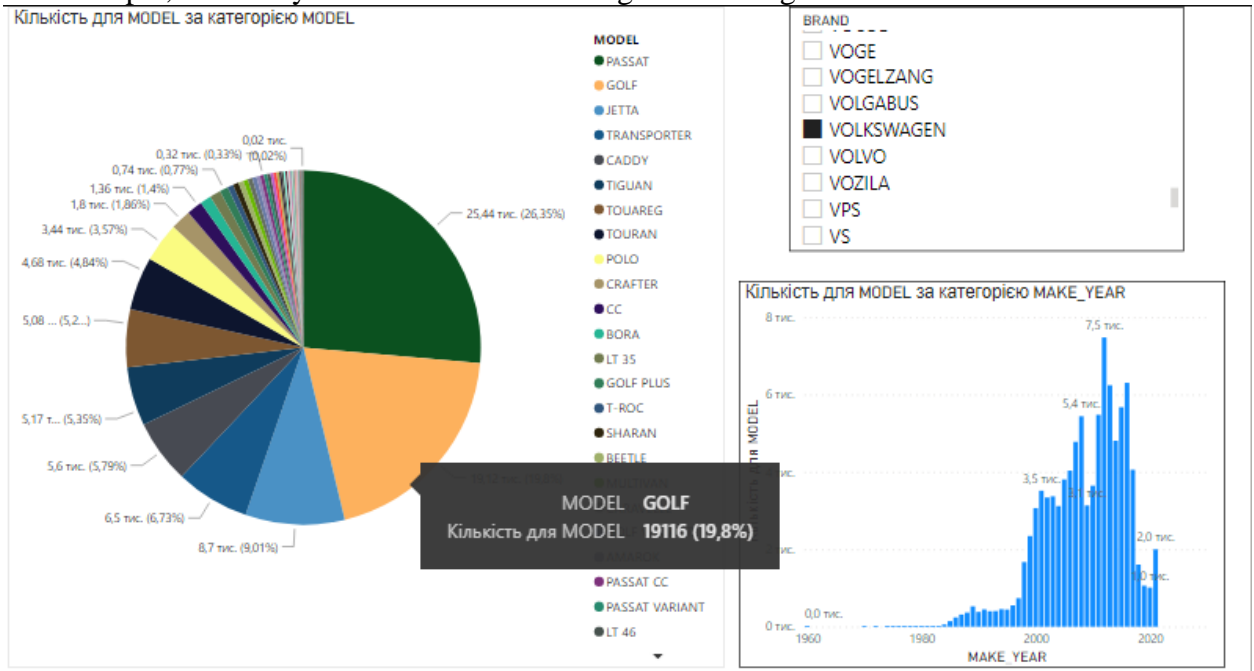


Fig.3. Analytics of vehicles of Volkswagen cars - model, year of manufacture

Thus, according to the Volkswagen brand, the most common models are Golf, Passat, Jetta and others. Years of release 2012-2015 with a trend towards new cars. Fuel type - gasoline. Also in accordance with Fig.5. in the right corner we can see the share of new cars purchased in 2021.

Data analysis is shown in Fig.2. indicates that a large proportion of vehicles are imported to Ukraine from other countries. Accordingly, we can determine the places of import and registration of vehicles, or in other words, territorial service centers (TSC). This approach allows you to identify the markets closest to the import of vehicles, which in turn reduces the cost of buying a vehicle.

The second factor in choosing a vehicle is to determine the criteria that will generally have the greatest impact on the end result.

The first and most important criterion is the pricing policy. For each type of user, the low price of the car plays an important role, but for a more accurate assessment before buying, you need to consider other criteria such as car age, reliability, maintainability, body dimensions and ergonomics. Of course, after listing all the criteria for choosing a car and choosing a specific model of the car manufacturer, the question arises which car to buy. New or used. In order to adequately make a choice, you need to compare the above criteria for one car model, but between a new and used car, to do this, create a comparison table with the most common criteria Tab.1.

In order to correctly create a choice, you should compare two options - your own car and a car for business. We will consider our own vehicle. Usually the buyer always starts from the price and the obvious disadvantage of a new car is its high price, usually not available to the majority of the population, and used cars are affordable and not always used car can be worse in condition and quality, but a major disadvantage of used cars there is no guarantee. There is also complete uncertainty that the car was not in a traffic accident or was not used for commercial purposes.

A car after commercial use is usually more problematic, and requires more attention and increased financial investment, which is not the case with cars that have been used for personal travel, such cars are usually well-groomed, affordable and most importantly cheaper. It is also worth noting the variety item of the same model when buying. The new car is definitely a disadvantage, as you can only buy a European car with a certain package of options are quite standard. When choosing a used car, it is possible to buy not only cars of the European version but also cars from other countries, which can be noted as advantages, as cars imported from Korea, USA or other countries have radically different configurations and may differ in quality, depending this can change the price. Therefore, the market of used cars is much more interesting and diverse for the buyer and also has the opportunity to save when buying at the expense of different regional prices, which can not be said about the new cars from the showroom.

Tab.1. Vehicle selection criteria

№	Criterion	New car	Was in the use of cars	Note
1.	Warranty period for use	Бали		
		10	0	
2.	Contingencies in case of breakage	0	-17	
3.	The cost of the car	-30	30	
4.	Security. Constant technical inspection.	8	-8	For new cars an average of 15,000 thousand km., Or 1 year.
5.	Software update	5	-7	Engine, automatic gearboxes, brake and track systems, safety levers and much more
20 more criteria				

In tab.1. evaluation criteria for new and used vehicles are given. The criterion is understood as an important factor in safety, efficiency, economy and more. The magnitude of the factor roughly corresponds to one tenth of the cost of the car and indicates an advantage or disadvantage. Zero is a neutral factor. The table shows the approximate units of measurement of factors and, accordingly, will differ for different manufacturers.

Conclusion. Based on the analysis of open official data sources, one of the most important ways to choose a vehicle is to analyze the vehicle market. This method allows not only to choose the optimal car for which you will most likely be able to buy spare parts, paints and various additional equipment, but to determine the VIN number of additional information, such as how many times re-registration and with what data.

For entrepreneurs engaged in the supply of spare parts, paints, equipment and more with the help of such an analysis, you can predict future orders, both by region and in the country as a whole and be the first in the market. It is especially important to note the small share of new car purchases, which is not good for the state.

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