

Professional Education for Automotive Specialists and Change of Their Profiles According to the Trends of the Vehicle Market in Albania

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Abstract

In Albania during the last three decades every sphere of life has changed, as well as professions. According to the demands of the labor market, the demands for automotive specialists have also changed. The purpose of this paper is to assess the current situation of specialist technician mechanics for vehicles and liaise with universities that prepare these professionals, the need for curricular changes of mechanical profiles according to trends in technological developments of new vehicles. To assess the potential labor markets, employment statistics and requirements for mechanical profiles of recent years have been collected. In Albania the trend of new cars is always growing. The technological level of cars currently circulating has increased, the trend is towards cars that feed on alternative fuels. The curricula of Universities and Professional Colleges that prepare these senior specialists for vehicles must adapt to these requirements presented by the labor market and new trends in production technologies of road vehicles. The collected statistical analyzes show an increase in the demand for qualified and certified technical specialists for the motor vehicle. From these results we conclude that improving the curricula of programs that prepare technical staff is a necessity to follow these changes with high growth in the automotive industry.

Keywords: auto mechanics, professional education, automotive industry, vehicles with alternative energy, technological innovations

Introduction

In the last 30 years, with the change of the regime from totalitarian to democratic, the way of life and the form of mobility have also changed. This has led to an increase and change of vehicles types. Thus, and the need for vehicle repair and maintenance [2] are increased.

Industry of vehicles today in Albania consisting of about 3550 services car repair shops, over 210 spare parts sales units, 15 new car dealerships with over 22.000 employees serving a fleet of 740700 vehicles.

Vehicle types	Number
Automobile	593280
Bus	7867
General transport vehicle - Van	49596
Trailer	5138
Semi - trailer	2400
Vehicle for special transport	11388
Truck	14404
Tractor	1673
Motorcycle	37931
Others
Total	740669

Table 1: Number of vehicles in year 2021 (DPSHTRr – statistics sector)

Number of total in year 2021 in Albania are 740669 vehicles, where the regions Tirana 35% [14], Durrës 13%, Fier 10% and Elbasan 7% have the main part of the fleet of road vehicles. From the table above we see that 80% of the totals are private cars.

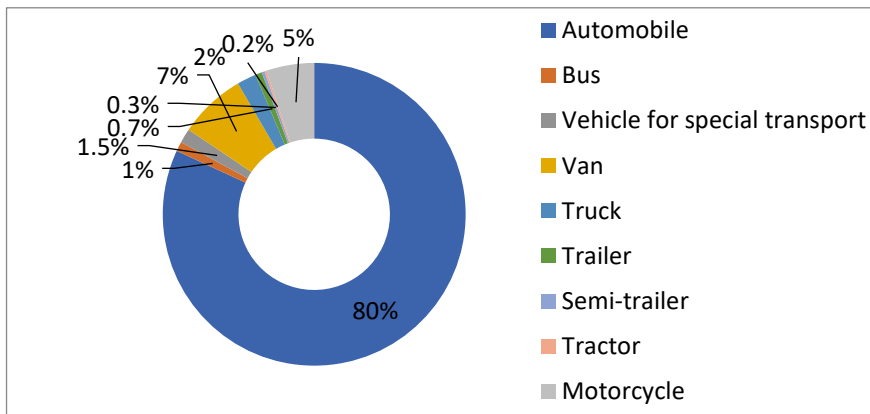


Figure 1: Percentage of vehicle types

The Albanian education system that prepares specialists in the field of automobiles starts from general secondary (gymnasium) or professional education [11].

These specialists then turn to universities for the bachelor or 2-year professional cycle.

According to the data, professional high schools [4] offer 22 basic profiles, where 5 engineering profiles represent 25% of all students.

High school student	Mechanical	Electro mechanical	Electronic	Electro technical	Thermo-hydraulics
full-time	964	368	687	935	996
13563	7.1%	2.7%	5%	6.8%	7.3%
part-time	970	-	33	257	195
4555	14.7%	-	0.7%	5.6%	4.3%
total	1934	368	720	1192	1191
18118	9%	2%	3.9%	6.5%	6.5%

Table 2: The data for high school student

These students enroll in university to deepen their knowledge and employment opportunities. In Albania have 2 public universities and 3 Professional Colleges serve to prepare these senior specialists for vehicles.

According to INSTAT statistics [6], 84.8% of active enterprises are service providers. Albania's economic development trends [16] with small and medium enterprises necessarily require the accelerated development of short-term 2-year professional study programs, which will prepare "masters in crafts".

This academic year marked a strong turn towards vocational education, enrollment in professional high schools increased, as a result and in university.

Methodology

To assess the potential labor market for the mechanic profile for automobile we have summarized the analytical employment data in the last years and the current and future requirements from vehicle services, from car showrooms, from car parts sales points. We are presenting this data in the bellows tables.

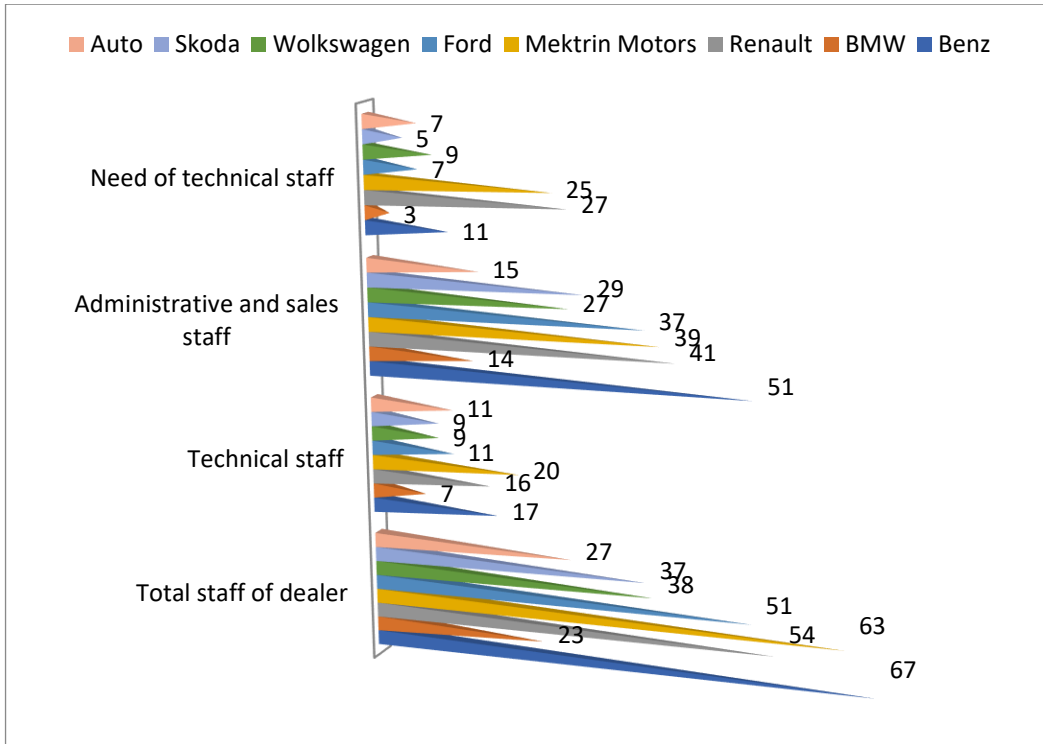
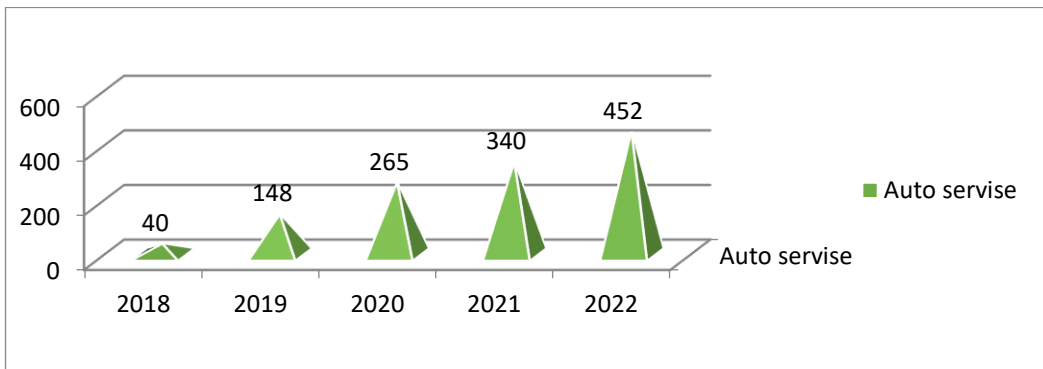


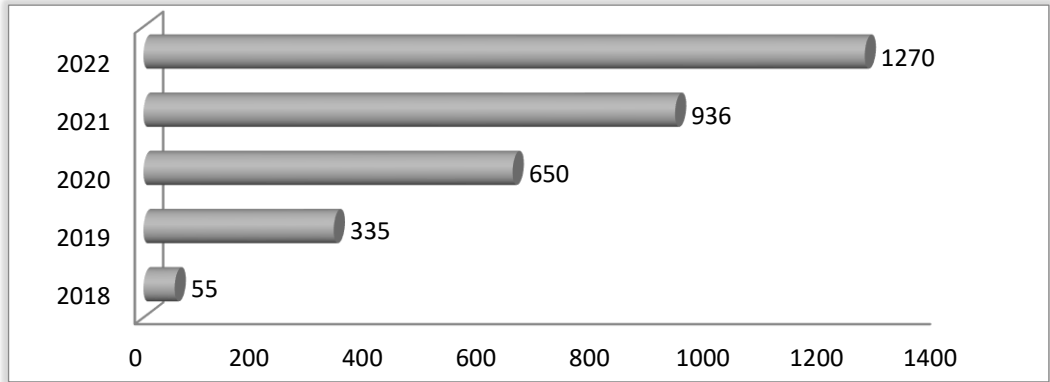
Figure 2: Need of technical staff of car showrooms in Albania

Total number of car service in the territory registered in the National Business Center varies 2900-4600.



Graphic 1: Total number of auto services licensed by the Ministry of Industry and Energy (statistics sector MIE)

The number of car autoservices that have more than 10 employees has increased from 30 to 80 car service.



Graphic 2: Trend of Auto-technical staff equipped with Certificates of Professional Ability

The number of vehicle services is stable, with a slight upward trend.

New vehicles use increasingly advanced technology to increase traffic safety and reduce accidents.

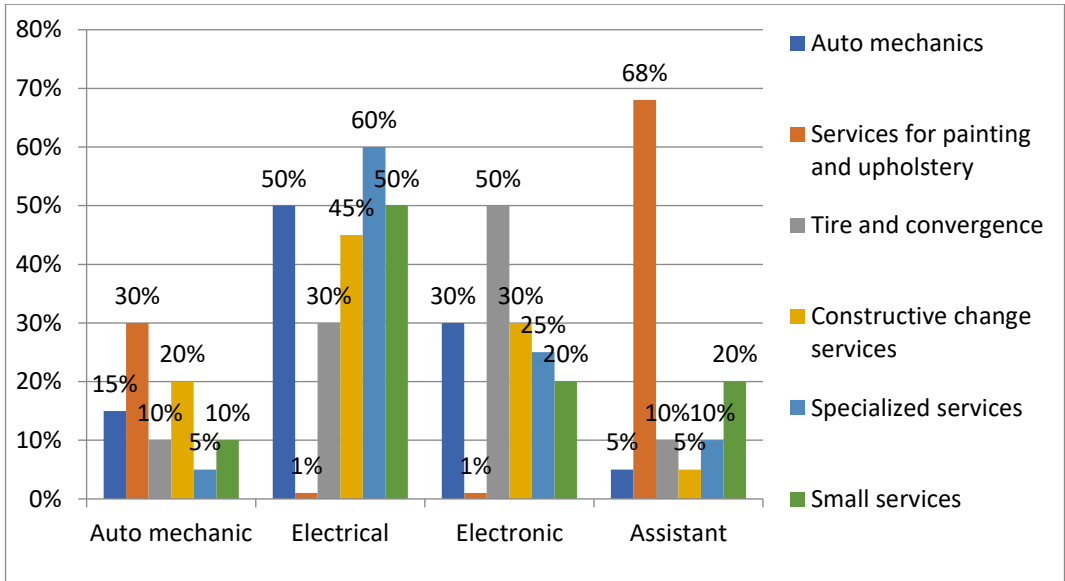
The changes of new vehicles produced in recent years, towards the use of biofuels and the growing trend of electric vehicles [7], in order to reduce air pollution and achieve a sustainable transport, have changed the profiles from purely mechanical to electromechanical, as reflected in the table below.

Discussion

In Albania there has been a steady increase in vehicles although under average per capita [3] the regional. Currently the import of cars is allowed with the obligation of Euro4 and surely this space will be narrowed more and more quickly. The trend of new cars with 0 km is always growing. The technological level of cars currently circulating has increased, the trend is towards cars that feed on alternative fuels as GPL, hybrid, hydrogen and electric.

Albania is moving towards membership in Europe and as in any sector, including that of car repair and maintenance, is obliged to adopt laws and regulations which will soon direct this sector to cars to create less and less pollution.

The curricula of Universities and Professional Colleges that prepare these senior specialists for vehicles must adapt to these requirements presented by the labor market and new trends in production technologies of road vehicles.



Graphic 3: Professions required by the autoservices taken in the study

Analysis

The collected statistical analyzes show an increase in the demand for qualified and certified technical specialists in the vehicle repair and maintenance sector. Currently the same numbers of mechanic profiles are required, but at the same time we find that there is an increasing trend for electrical and electronic profiles as well.

The tendency of Auto Services itself is to reduce their number in total, but the few that will remain will have a larger number of employees. There is also a tendency for dedicated car services to be dedicated to a vehicle brand in order to minimize working hours and process costs.

Conclusions

From these results we conclude that improving the curricula of programs that prepare technical staff is a necessity to follow these changes with high growth in the automotive industry.

To increase the quality of students preparing for auto-mechanics it is necessary to dynamically and functionally integrate teaching with professional practice and experience.

Continuous training of academic staff, laboratory improvements and increased cooperation with entities that provide technological innovations in the field of vehicle repair and maintenance are also important factors for the preparation of skilled specialists for this labor market.

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