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Selection methods of vehicles on the basis of performance

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ABSTRACT: In road transportation system, the competitive essence has two aspects: first, competition among motor transport enterprises, and then competition between customers. The fact that the competition has two aspects leads to a large number of species. Different International Cargo Transport Enterprise (CTE)and their transport services have different operational characteristics.Due to the research objectives, automobile transport has been taken into account that inter-enterprise competition arises in accordance with their exploitation characteristics and that these qualities have a decisive impact on the clients.This article shows the evaluation methods of expert assessment to determine the performance of vehicles.This article expounds factors affecting to performance of road transport systems, methods, and criteria for performance also the results of their calculations.The use of a structured approach has allowed to systematize the factors identified by the source of inputs, quality and price components as shown in the results of this research.

KEY WORDS: Road transport, international cargo, Vehicle performance, Integral indicators, Expert evaluation, Discounting.

I.INTRODUCTION

As it is known, the competitive environment in the activity of the International Cargo Transport Enterprise (CTE) is one of the main sources of development. However, many competitors, including large transport companies with substantial resources, do not have the capability to meet all the needs of their customers, while they spend most of their time on their activities. Therefore, the competitive essence has two aspects: first, competition among motor transport enterprises, and then competition between customers. The fact that the competition has two aspects leads to a large number of species. Different CTEs and their transport services have different operational characteristics.

Due to the research objectives, automobile transport has been taken into account that inter-enterprise competition arises in accordance with their exploitation characteristics and that these qualities have a decisive impact on the clients.

In their activities, motor transport companies use different forms and methods of competition and their different exploitative qualities (1.1-1.2 figures).Competitiveness is a complex concept, and it is described in various scientific sources [1, 2, 3]. The quality of CTE competitiveness is practically determined by their exploitation characteristics. It is therefore desirable to disclose this concept. First of all, it is necessary to define the concept of exploitation characteristics of the motor transport enterprise. The exploitation characteristics of the vehicle transport company are the ability to maintain a leading position among other transport companies for a long time in the market of transport services (TSCs).

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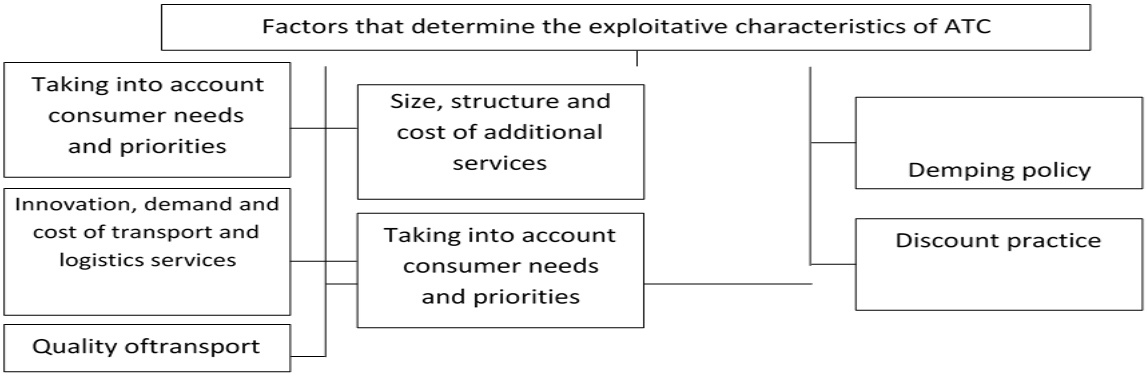

Figure 1.1: Factors that determine the exploitative characteristics of motor transport enterprises

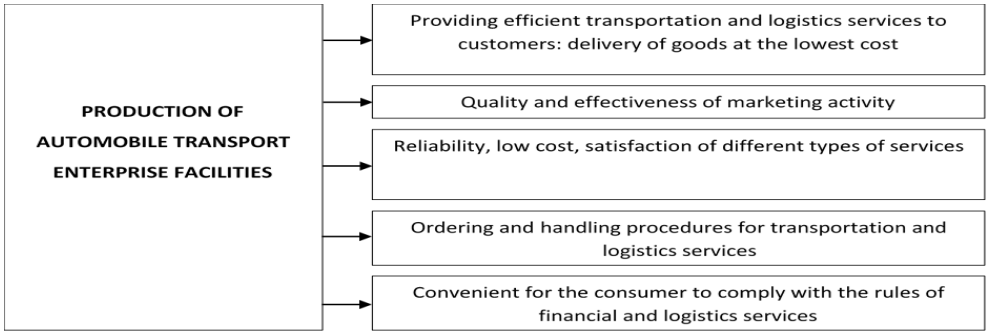

Figure1.2: Sources of exploitation characteristics of the motor transport enterprise.

II. METHODOLOGY AND DATA ANALYSIS

The main sources of exploitation of the motor transport enterprise are shown in figure1.2.The main principle of logistics approach to this issue is the priority of client's interests. Quality and exploitation quality of carriage services is a combination of technical and technological features, guarantee system, compensation and benefits that reflect customer satisfaction and the level of traffic, the level of its purchasing, at a specific time of the TIS within a specific segment of competitiveness. The exploitation quality of the automobile transport enterprise (CTE) is not immanent, because it operates in a certain competitive environment, which is influenced by factors. Democratization of business activities of enterprises necessitates improvement of methods of formation of new forms of their management and composition of technical-technological means .It is therefore desirable to systematize the basic requirements for trucks involved in international cargo transportation (Figure 2.1).Investigations on the problem of re-production of fixed capital of motor transport, according to approaches from the figure below, cannot be the basis for the development of methods of investment in competitive action instruments. Thus, transportation of international goods by motor transport requires a number of transports, technical, organizational, legal and economic issues that are not found in the domestic market. Consideration of options for automobiles presented in the Uzbek market for the purpose of identifying the exploitative quality of the international cargo transportation vehicles and the wide range of practical use of developed investment techniques for them.

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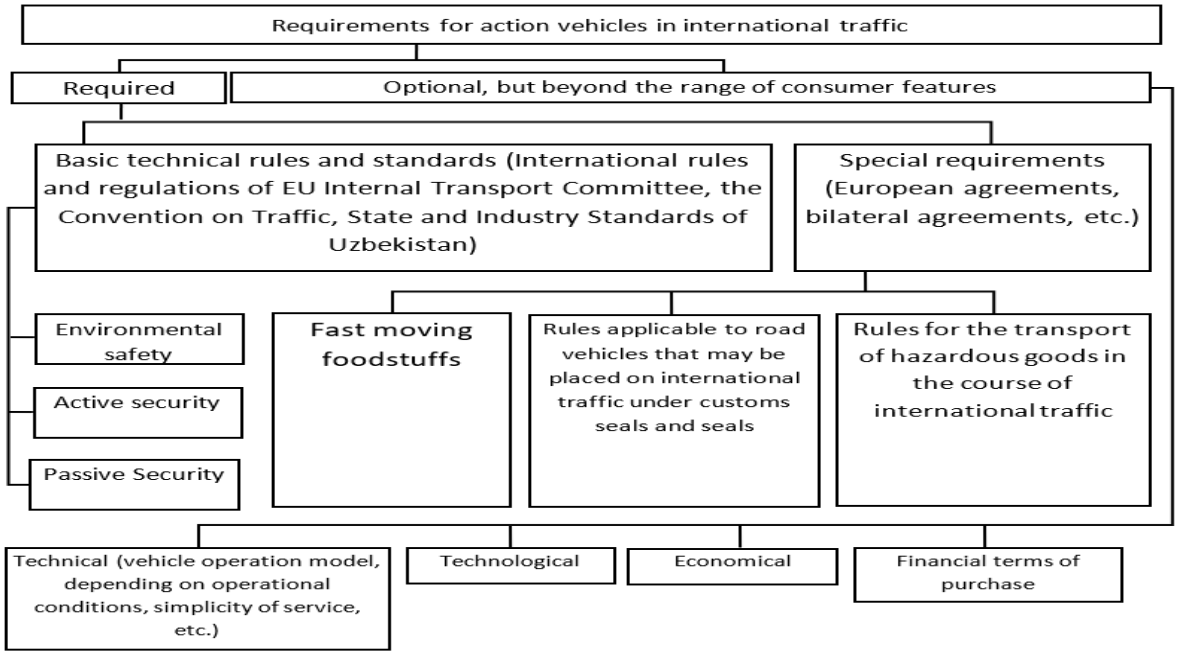

Figure 2.1: Requirements for automobiles for international cargo transportation.

Competing for international carriage of goods by way of automobile transport, the formation of a bank of similarities can be carried out on the basis of classification in the market of certain transport services, taking into account their purpose, operational conditions and life cycles.When choosing similar competitors, it is necessary to adhere to the following criteria: the same functional objective; focusing on a single group of consumers; Comparison of classification indicators; a unique nomenclature of indicators being evaluated; The only way to measure indicators.
All types of vehicles are in the same group as the above-mentioned requirements and international freight traffic.
At the stage of identifying the most competitive vehicle, we have considered the following cars: Volvo FH-12, DAF FT 95XF, Mercedes Benz Actros, MAN TGS 19,400. The summary of these tools is shown in Table 2.1.

Table 2.1: Brief information about cars coming into the bank of similar banks

Vehicle model	Brief overview
Volvo FH 12-460	In the years 1994 and 2000, it was recognized as a truck. Engine power is 420 hp. (Euro-2). The full weight is 19,7 t. The total weight of the bus is 44 t.
DAF FT 95XF	In 1998, he won the DAF 95XF "Loader truck". The engine capacity is 428 hp (Euro-2). The full weight is 19,7 t. The total weight of the bus is 44 t.
Mercedes-BenzActros 1846 LS	Engine power is 428 hp. (Euro-2). Full weight 18 t. The total weight of the bus is 42 t.
MAN TGS 19.400 4x2 BLS	Engine power 400 hp (Euro-5). Full weight 19t. Total bus speed 44t.

Exploitation characteristics of the vehicle are assessed on the basis of technical and economic indicators and are based on assessment of the competitiveness of the vehicle (Table 2.2-2.3), which is reflected in the cost of international carriage on the market of transport services of Uzbekistan.
For this purpose, in the example of "Central Asian Trans" JSC, calculations were made on the basis of the UNIDO's "COMFAR" program to determine the selection of operational vehicles, cash flows, expenses, income and profits.

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Table 2.2: The price of cars included in a similar bank

Vehicle model	Customs duties and taxes, US $	Total Customs Duties and Taxes, US Dollars	Customs Duties and Taxes, U.S. Dollars
Volvo FH 12-460	105000	26250	131250
DAF FT 95XF	106484	26621	133105
Mercedes-BenzActros 1846 LS	110600	27650	138250
MAN TGS 19.400 4x2 BLS	114913	-	114913

Table 2.3: Structure of expenses (thousand Uzbekistan So'm)

The name of the resource	Annual expenses
1. Fuel	3 215 381
2. Tires	97 855
3. Current repair and current service	215 856
4. Fuelandlubricants	323 398
5. Servicetrips	856 240
Total	**4 708 730**
6. Utilitiesexpenses	4178
7. Other i / chexpenses	235437
Total	**4 948 345**

Estimates on financial results are shown in Table 5.It is possible to conclude that the purchase of 50 trucks by credit will allow to expand the process of transportation. Taking into account the return of loan amount in the first year of 1621045 thousand Uzbekistan So'm in the first year of the enterprise, it is 1580063 thousand Uzbekistan So'm, of which profit is 40982 thousand sums. Project profitability is 38%. NPV - 1 734 518, IRR - 8%. Period of validity is 6 years.

Table 2.4: Financial outcomes (thousand Uzbekistan So'm)

Revenue from sales	10 361 088
VAT	315 770
Net trading income	**10 045 318**
Cost of goods sold	6 701 901
Gross income	**3 343 417**
The running expenses	61 800
Other expenses	282 524
Tallage	403 729
Implementation costs	207 222
Income from operating activities	**2 388 142**
Credit payment	663 626
Pre-tax income	**1 724 516**
Single tax	6%
(calculation)	103 471
Net profit	**1 621 045**

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Implementation of the project will allow Uzbekistan to expand its cargo transportation to foreign countries and across the country. One of the special methods of financial and economic assessment of investment projects efficiency was discounting [7]. In the calculation of future values special tables are used, as well as the special tables included in the ratios of the initial rate of investment of different amounts r and t. (r = 7 percent t = 1,07 for 2 years, 2 years 1,145, 3 years 1,225, 4 years 1,311, 5 years 1,403, 6 years 1,501 coefficients)

$$FV=PV*(1+r)t \quad (1)$$

FV - value of the next period;
PV - valid value;
r - investment profitability, ie. interest rate;
t - Time interval, number of circuits.

The method of discounting appears to be uneven because of the fact that the sum of money is not the same for today, that is, one current sum does not have one Uzbekistan So'm per year. This is the amount of money that is included in commercial transactions (including bank deposits) capable of providing growth for a year after a large sum of earnings. Revenue from investment project in national currency for the first year was 10361088 uzbekistanSo'm, discounted income for the remaining years in foreign currency.

FV1 = 6279447 * 1.07 = $ 6719008 thousand US dollars
FV2 = 6279447 * 1,145 = 7189966 thousand US dollars
FV3 = 6279447 * 1,225 = 7692322 thousand US dollars
FV4 = 6279447 * 1,311 = $ 8232355 thousand US dollars
FV5 = 6279447 * 1,403 = 8811064 thousand US dollars
FV6 = 6279447 * 1,501 = $ 9425449 thousand US dollars

Discount rate is considered to be less than the actual interest rate on long-term loans in the capital market.
According to the results of analysis of tables 8, 9, the highest indicator of technical competitiveness is the MAN F 2000

Table 2.5: Calculating the Comparative Cost and Competitiveness Criteria for Performance Models of the Study Models

Vehicle model	$Ц^{эт}_{п}$,, thousand USD	$Д_{\sum}$, USD Thousand	$З_{\sum}$, USD Thousand	$Ц_{экв}$, USD Thousand	$К_{пп}$
Volvo FH 12-460	129380	6719008	4770496	131250	1,00
DAF FT 95XF		6719008	4972066	133105	1,13
Mercedes-BenzActros1846 LS		6719008	5576777	138250	1,42
MAN TGS 19.400 4x2 BLS		6719008	4165785	114913	0,68

Table 2.6: Computation of the integral criterion of competitiveness

Vehicle model	$Д_{\sum}$, USD Thousand	$З_{\sum}$, USD Thousand	Kpp	Kint
Volvo FH 12-460	6719008	4770496	1,00	1,25
DAF FT 95XF	6719008	4972066	1,13	1,22
Mercedes-BenzActros 1846 LS	6719008	5576777	1,42	1,18
MAN TGS 19.400 4x2 BLS	6719008	4165785	0,68	1,38

The calculations show that similar vehicles of international motor transport are the most competitive in the bank as the MAN TGS 19.400 4x2 BLS.

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III.CONCLUSION

From the above research data analysis and the methodology used in this paper, the following conclusions are drawn below:

- Exploitation characteristics of the vehicle are assessed on the basis of technical and economic indicators and are based on assessment of the competitiveness of the vehicle
- At the stage of identifying the most competitive vehicle, we have considered the following cars: Volvo FH-12, DAF FT 95XF, Mercedes Benz Actros, MAN TGS 19,400.
- One of the special methods of financial and economic assessment of investment projects efficiency was discounting.
- It is possible to conclude that the purchase of 50 trucks by credit will allow to expand the process of transportation.
- Discount rate is considered to be less than the actual interest rate on long-term loans in the capital market.
- According to the results of analysis, the highest indicator of technical competitiveness is the MAN F 2000

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