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The Usage of Cognitive Maps in the Comparison of Marketing Mix of Railway Passenger Transport

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Abstract

The transport company that decides to enter the transport market in passenger transport usually has defined its business objectives. However, the objectives are flexibly changing under the influence of the development of the transport market. Because it is a dynamic system, it is necessary to comprehensively evaluate the marketing mix, not only the competition. The comparison and use of cognitive maps, which the article is dealing with, are effective instruments. By comparing the various instruments of marketing mix of railway passenger carriers in the Slovak Republic a cognitive map is formed, which graphically illustrates the causal link of marketing instruments of all carriers in the Slovak Republic.

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1. Introduce and cognitive map

A cognitive map is an appropriate instrument for modelling systems in a marketing company. The proposed system can then be much easier to analyze and understand its development. The created system model can be expanded any time by adding more terms (joints) and their dependencies (edges) [1]. An opposite process may be

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used too, where the joints and edges will be subtracted if they are no more necessary in the given system or if we just want to test how it would act without it. Therefore, we do not need to start from the beginning [2].

The cognitive map can be perceived as a system with a base of marketing instruments. Individual joints (terms) represent an expected part of a marketing instrument and their activation value represents the rate of fulfilled assumption. The edges between joints thus connect the expected and concluding part, creating a marketing instrument. The values of these connections can be perceived as a marketing instrument credibility [3].

2. Marketing mix in passenger transportation

The instruments of marketing mix has already been defined in the 20th century are nowadays insufficient for a successful management of companies. This is especially true for service companies – transport companies, which to some extent is caused by the specific nature and characteristics of transport services. Transport services are specific especially because of the particular inseparability, intangibility, immateriality, versatility and transience. It is therefore necessary for transport companies to extend the basic marketing mix instruments to the 7 elements, the so-called “7P”: Product, Price, Place, Promotion, People, Physical Evidence and Process [4]. Cognitive maps have a very useful feature – the structure can be extended at any time, without having to be start from the beginning. It is sufficient to add new marketing instruments and expand the matrix of links.

2.1. Product

The data in Table 1 indicate that currently on the market of transport services in passenger transportation the more connections a carrier provides, the less services are offered in these connections.

Table 1. Comparison of provided services of railway passenger carriers.

Carrier (category of trains)	Provided service																
	dining car	seats reserved for children	free water	free magazines	Wi-Fi	air conditioning	electric sockets	mobile bar	transport of bicycles	mandatory seat reservation	magazine of the carrier	silent zone	headphones for borrowing	security service in night trains	sale of accessories on the trains	blanket for borrowing	transport of personal cars
ZSSK (Os)	-	-	-	-	▼	▼	▼	-	+	-	-	-	-	-	-	-	-
ZSSK (R, RR, EC, Ex)	+	+	▼	▼	▲	▲	▲	+	+	-	-	▼	-	-	-	-	▼
RegioJet (Os)	-	-	-	+	+	+	-	-	+	-	+	-	-	-	-	-	-
RegioJet (IC, EC)	+	+	+	+	+	+	+	+	-	+	+	+	+	-	-	▼	-
LEO Express	-	+	-	+	+	+	+	+	-	+	+	+	+	+	-	+	-
ARRIVA	-	+	+	-	+	-	+	+	+	-	-	+	-	-	+	+	-

(+) – provides, (-) – does not provide, (▲) – provides in most connections, (▼) – provides in a few connections.

The major deficiency of the Slovak rail company ZSSK is the fact that their services generally cannot be provided in all categories of trains and thus the quality standard for the passengers cannot be guaranteed. The RegioJet carrier provides more services in subsidized trains on the route Bratislava–Dunajska Streda–Komarno than trains of the category ‘passenger train’ of the carrier ZSSK. Long-distance connections are provided with the widest range of additional services and also the most free additional services by the carrier. The carrier LEO Express also offers a wide range of services. The advantage in comparison with ZSSK is that the LEO Express is able to guarantee all provided services in all connections, as the company rolling stock consists of vehicles of the same type. The night trains, however, as the only ones provide a service in the form of the presence of private security

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