2012 International Conference on Medical Physics and Biomedical Engineering

Application of Gray Relational analysis method in comprehensive evaluation on the customer satisfaction of automobile 4S enterprises

Yao Cenglin

Department of Electrical and Mechanical Engineering,Wuhan Commercial Service College,Wuhan, China
wuhanycl@163.com

Abstract

The car sales enterprises could continuously boost sales and expand customer groups, an important method is to enhance the customer satisfaction. The customer satisfaction of car sales enterprises (4S enterprises) depends on many factors. By using the grey relational analysis method, we could perfectly combine various factors in terms of customer satisfaction. And through the vertical contrast, car sales enterprises could find specific factors which will improve customer satisfaction, thereby increase sales volume and benefits. Gray relational analysis method has become a kind of good method and means to analyze and evaluate the enterprises.

Keywords:Grey relation automobile 4S enterprises customer satisfaction analysis

1.Introduction

According to international practice, as for cybernetics, the quantity of information is often presented by shade. Sufficient and definite (known) information is presented as white, and insufficient and indefinite information is presented as black, as for the only partly definite information is presented as grey.

Therefore, in cybernetics system, information unknown system is called black system, information completely determined system is called white system, and everything between the two whose information is still not completely determined or known is called the gray system.

The gray system is a system contains known as well as unknown or indefinite information. The main task of grey system theory is to propose a new modeling idea and method for a gray system of less clear overall insufficient information from the cybernetic angle. Through the analysis of relevance and measure of various factors, we could deal with random data and discover the discipline with the "grey data mapping" approach, thereby making our cognition of the development of system from none to some and

little to more. That is, decreasing the gray level and meanwhile increasing the white level of the system gradually, until we could master the change discipline in it.

As for the research process of grey system theory, we should start from the black box whose internal structure and characteristics completely unknown to the gray box whose partly unknown. The so-called "box", means that we should do research from the external characteristics of system, and the known information inside the "box" is just beyond our use. However, the gray system has broken the constraints of "box", trying to play the role of existent known information. The system mainly engages in the research of internal structure, parameters and characteristics and achieves the disciplinary cognition of the internal essence and development [1].

At present, the research of gray system theory attaches more importance on the aspects such as social economy and business. With the development of research, gray system theory will plays a more and more important role in enterprise planning and the evaluation of commercial activities.

2.Mathematical modeling idea of Grey comprehensive evaluation method

Gray relational analysis method is a new analysis method of grey system theory. According to the similarity or difference of the developmental trend among the factors, i.e. "grey relevancy", it could measure the relevancy among factors. The grey relational analysis method can be used to describe the relative changes among factors in the system development process. If the relative changes of the two were basically the same in the development process, we could consider the relevancy between them is large, and conversely, the relevancy is small.

In the real world, the relevancy among many factors is grey, namely the overall information and mutual relevancy is indefinite. Therefore, when analyzing the relationship between two things, we could bring in the concept of relevancy to measure the relation between each factor and describe their relative changes quantitatively.

3.Significance of comprehensive evaluation on customer satisfaction of automobile 4S enterprises

3.1. Connotations of automobile 4S enterprises

4S store is an automobile franchise operation mode with the core of "four-in-one", including vehicle sales (Sale), spare parts (Sparepart), the post-sale Service (Service), information feedback (Survey) and so on. It has the unified characteristics of appearance, identification and administrative standards, operating only one single brand. It is a tangible market with prominent individuality, consistent channel and unified culture idea. 4S stores are obviously superior in ascending the brand and image of the automobile enterprises.

3.2.Characteristics of automobile 4S enterprises

4S mode is actually the product under the fierce competition of automobile market. As the market gradually becomes mature, so does the user's consumer psychology. Since the user's demand diversity, and higher requirements on products as well as the services, the original sales agent system has no more been able to adapt the needs of both the market and user. The emergence of 4S stores could right satisfy the customers' different requirements. The stores could provide well-equipped and clean maintenance area, modern equipment and service management, highly professional atmosphere, well-maintained service facilities, sufficient supply of spare parts and timely tracking service system. Through the 4S store services, the consumer could get a sense of trust to the brand, therefore expand the automobile sales.