Quality Evaluation of Group-Buy Websites

Zhuoxi Yu, Jilin University of Finance and Economics, Changchun, China
Yanqing Wu, Jilin University of Finance and Economics, Changchun, China
Zhiwen Zhao, Jilin Normal University, Siping, China

ABSTRACT

Group buying mode has been one of the hottest business models in the Chinese Internet area in recent years. Though the market competition is intense, the demand of group purchase is still on the rise. Nowadays, the research on comprehensive evaluation of group buying websites in the country is still tiny. The paper used DEA combined with AHP to evaluate popular group buying websites. According to the characteristics of group buying websites, the authors evaluate the quality of group buying websites from four aspects. There are running efficiency, profit ability, popularity and customer satisfaction. Then they get the comprehensive evaluation results of each website which based on those four aspects. Some suggestions of website building for group purchasing enterprises are proposed.

KEYWORDS

AHP, Customer Satisfaction, DEA, Group Buying Websites, Proposal

INTRODUCTION

With the rapid development of e-commerce websites, large numbers of group buying model based on the Internet were coming forth. The market is increasing competitive. In 2010, group buying model which can started with a few million and made a lot of money quickly were extended to China. Then quickly set off unprecedented dimensions “business battle royal” in the history of Chinese Internet. In the <group-buying market statistic report in January-February.2014>, it had forecast that the scale of group-buying market will exceed 70 billion in 2014. And by the end of November.2014, a total turnover has realized 658.7 billion throughout the country. According to the average monthly growth rate 5.8% in the previous 11 months, we can calculate that it can realize turnover of 82.2 billion in December.2014. From the first half of this just a few months’ time, the group buying is still one of the most talked about domestic Internet vocabulary and involved in cross-border, high finance, and advertising. The news of group buying websites around media is filled with pages almost every day. The industry of group buying model excitement level called “unprecedented.” However, behind these setting, some of the opposite trend began to increasingly coming out. In happy group, the group buying as the representative of the first on-line buy site began to shrink the size of the implementation of massive layoffs or even shut down the local sub-station. Buy site domestic and foreign are slowly showing two distinct states. A latest data from Electronic Commerce Research Center in China shows that there are 5376 group-buying websites closed and the failure rate was 86% from the beginning of group-buying to the present. Less than twenty percent of group enterprise are alive, the demand of group purchase are exploded rather than decreased. The cause of this situation is numerous, so it has important practical significance to evaluate the quality of the group-buying websites with scientific and effective method.
In recent years, the study on e-commerce sites’ evaluation has been an important topic in the field of e-commerce. There are many research results of evaluation research of e-commerce sites at home and abroad. Such as the evaluation which based on customer satisfaction, the evaluation which from the perspective of building their own websites evaluation. Utilizing different evaluation methods, Analytic Hierarchy Process, factor analysis, cluster analysis and so on. The evaluation research of group-buying websites at home is still at an early stage. Peng Liang evaluated group buying websites from the view of the customer trust (Peng Liang, 2011, p. 85-88). Liao Xiaoli (2012) built the ideal model of group shopping websites information architecture against the existing problems of group shopping websites and explains it (Liao Xiaoli, 2012, pp. 138-143). Zhou Beijing and Hou Lun establish an effective evaluation system of group-buying websites on the basis of the reviewing of the evaluation for E-commerce website, experts interview and customers investigation, and the measurement of the evaluation index was quantified researched by use of the analytic hierarchy process (Hou Lun, 2012, pp. 50-66). Xi Li applied link analysis and the measure of web impact factors, used search engines Altavista to evaluate the main group-buying websites in China. In conclusion, the evaluation study of group buying websites is still need to deepen. We should establish a scientific appraisal system and use scientific methods further (Xi Li, 2012, pp. 46-48).

This paper selected seven popular group-buying websites, there are Meituan, Dianping, Baidu Nuomi, La shou, Nest, Man zuo, 58 group. It used DEA combined with AHP to compare and evaluate the quality of group buying websites. On one hand, for quantifiable evaluation index, we used DEA to calculate the relative efficiency which can be regard as index of Analytic Hierarchy Process. On the other hand, for non-quantitative evaluation index, we used a questionnaire to investigate the customers of group buying websites and then obtain the evaluation results of one indicator. Then use AHP to determine the relative weight of the index, build the group-buying websites quality evaluation model based on DEA-AHP. Finally, the comprehensive evaluation result is obtained.

**DATA ENVELOPMENT ANALYSIS AND ANALYTIC HIERARCHY PROCESS**

**Data Envelopment Analysis**

Data envelopment analysis is a new system analysis method, which to evaluate relative effectiveness or benefit of multi-index input and multi-index output for the same type of units. It proposed by famous operational research experts based on the concept of relative efficiency. DEA is an effective way to deal with multi-criterion decision problem. It applies mathematical programming model to calculate and compare relative efficiency of decision making units, then evaluate the evaluation objects (Chames, & Cooper, & Rhode, 1978, pp. 429-444).

Data envelopment analysis is roughly defined as a nonparametric method of measuring the efficiency of a Decision Making Unit (DMU) with multiple inputs and/or multiple outputs. This is achieved by constructing a single ‘virtual’ output to a single ‘virtual’ input without pre-defining a production function. It is well known that the most widely used DEA models, named DEA-CCR, deserve a greater attention, therefore they will be utilized later in this paper.

After the selection of container ports, the output variable for the study should be selected firstly. Drawing on the literature review, site survey & interview, and brainstorming to eliminate the duplication factors, the initial inputs/outputs variables can be chosen. Then, in order to provide a more comprehensive picture of research, and for the purpose of finding the operational efficiency value, an exploration has been applied, which is composed of the CCR, BCC and Super-efficiency DEA models and three analytical approaches including efficiency value analysis, return to scale approach and sensitivity analysis. After that, the evaluation results and suggestions will be given.

The most excellent advantage of Data envelopment analysis is without any weight hypothesis. The weight of each input and output is not identified according to the evaluator’s subjective. The optimal weight is obtained from the actual data of DMUs.
EDI and Small/Medium Enterprises
www.igi-global.com/chapter/edi-small-medium-enterprises/9631?camid=4v1a