

Decision making on product line in furniture industry using survey result, correspondence analysis and AHP

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Keywords

Decision Making, Furniture Industry, Correspondence Analysis, Ahp

Abstract

The paper presents a case study in which a potential investor wanted to invest into a furniture business in the Republic of Croatia. In six Croatian regions 950 randomly selected persons (region stratified sample: R1-220, R2-120, R3-120, R4-110, R5-180, R6-180), were asked by telephone what kind of furniture they would like to buy in the next two years and how much they were prepared to pay for the purchase. The furniture was divided into the following categories: kitchen and dining room, living room, nursery, bedroom, study, bathroom and toilet, hall, and other. The intending to invest in furniture we defined (quantified) as the number of average salaries that they are willing to invest in the purchase of furniture. Results of the analysis of variance show that there are statistically significant differences in the number of average salaries that people are willing to invest by region. At least they are willing to buy in the region 4 (mean=2.49, se=0.25) and highest in the region 6 (mean=4.14, se=0.34) and this difference was statistically significant. For other regions (region1: mean=3.54, se=0.27; region2: mean=2.92, se=0.38; region3: mean=3.91, se=0.42; region5: mean=3.46, se=0.19) differences in average values of investment intentions are not statistically significant. Based on the results of a consumer survey and correspondence analysis we determined what kind of interest in certain types of furniture shown by regions with regard to the entire market (all regions) and total interest for a particular type of furniture. Correspondence analysis is a descriptive/exploratory technique designed to analyze simple two-way and multi-way tables containing some measure of correspondence between the rows (i.e. regions) and columns (i.e. furniture).

According survey result and correspondence analysis we found that two regions (2 and 4) are not interesting for further analysis (there is no interests for the specific furniture and is to low desire for investing).

In the further analysis we were interested in the connection between types of furniture and amount of investment for each region (1, 3, 5 and 6). For easier interpretation and due to a need of the Analytic Hierarchy Process (AHP) we classified average number of salaries into five categories: [0-1], (1-2], (2-3], (3-5], >5.

Based on the results of a consumer survey product lines were selected by regions. After selected possible alternatives (product lines) and the priorities determined, using AHP with help of experts in the marketing of the furniture industry we will determine which of the product lines was the most profitable taking into account some other criteria of successful business operations. The multi-criteria model has been used.