

Satisfaction: a distribution-free software application for studying customer satisfaction in sport

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Abstract

“Satisfaction” is a distribution free statistical software application for studying customer satisfaction in sport. Several models can be fitted (Importance-Performance Analysis, gap model, penalty-reward-contrast analysis...) Plotting tools are emphasized. Segmentation techniques and useful inference methods are included. Furthermore pre-post customer satisfaction designs are considered. A number of sport examples (datasets) are incorporated.

Aim of paper

Customer satisfaction is emphasized by managers in order to increase loyalty and eventually profitability. Customer satisfaction is usually assessed through questionnaires leading to specific statistical analyses. A bewildering toolbox of such proposals exists in marketing literature but when it comes to tangible computations, one must rely on do-it-yourself processes. The goal of this paper is to present the “satisfaction” computer program that allows sport managers to carry out more easily customer satisfaction statistical calculations.

Technological background

The R software is a free environment for statistical computing and graphics available on Windows, Mac and Unix operating systems. Packages may be written that extend the base software in special areas of interest.

Software design

The “satisfaction” package enables to fit several customer satisfaction statistical models: first some simple descriptive statistical tools (e.g. mean plot, summary statistics), second several classical models such as the gap model, Importance-Performance Analysis (IPA, Martilla & James, 1977), derived IPA, Vavra’s Importance Grid Analysis, and third more sophisticated techniques within the Kano’s concepts of satisfying and dissatisfying attributes: Kano’s method, Llosa’s tetraclass model, Brandt’s simple model, penalty-reward-contrast analysis. Furthermore, many graphical functions are available for visualising the results thus obtained and ease their communication to managers so as to guide resources allocation decisions.

Two extensions of customer satisfaction statistical models are suggested in Farnum & Hall (2007). On the one hand, segmentation methods are particularly fruitful to understand the differences between specific targets (e.g. women versus men, fans versus occasional spectators). This strategy is currently developed for each of the previous models and visualisation methods ought to be provided soon. On the other hand, inference techniques are seldom considered to provide guidance for the analysis of results. Hypotheses tests for instance may help in IPA to define the frontiers between “possible overkill”, “low-priority”, “concentrate here” and “keep

up the good things” elements. Also, plotting techniques do benefit from superimposing confidence intervals.

Besides, when improvements are decided and consequently implemented, their effect must be checked. Innovative methods for studying pre-post designs in customer satisfaction (Champely & Boutroy, 2012), statistical summaries and plotting devices are included.

Datasets are attached exhibiting different measurements (importance/expectations, performance/attribute satisfaction, overall satisfaction, recommendation to a friend or relative) in various sport settings (rugby club, soccer club, indoor climbing center). Standard demographic questions – including sport expertise - are a part of any satisfaction questionnaire. Specific visualisation techniques such as population pyramid, cartography, economic capital by cultural capital map, are provided to describe the main characteristics of the sample, suggesting some segmentation strategies and defining market size. Some useful functions are dedicated to a careful coding of data sheets imported from Excel™ or Google forms™ (multiple response variables, Likert scales)

Conclusion

The “satisfaction” software application is at the moment a work in progress but the final goal is to create a whole environment designed for teaching, consulting and research: sport datasets, satisfaction questionnaires including standard measurements (mainly written in French) such as SERVQUAL, SERVPERF, Retail Service Quality Scale etc, and finally an electronic book describing customer satisfaction statistical methods using sweave™ code to dynamically integrate statistical functions from the “satisfaction” software tool.

References

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