

The Loyalty of Travel Agency Clients. An Empirical Study

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Abstract

The article presents a client loyalty model which may be used in the process of managing an optimum portfolio of clients by means of identifying and selecting key clients of a tourist enterprise. There are also described results of the author's own research allowing us to identify the key factors determining the occurrence of behavioral loyalty of travel agency clients. The analysis covered real data from the booking system of one of the Polish nationwide franchise networks consolidating 44 travel agencies, referring to 3 923 tourist services reservations. In the study of the occurring relationships a non-parametric method of MLP (Multi-Layer Perceptron) neural networks was applied. The following variables turned out to be the most important determinants of behavioral loyalty: duration of the tourist event, number of purchased offers and time between the booking date and the date of tourist event commencement. The customer loyalty prediction model was used to carry out in-depth customer segmentation which, in turn, allowed the development of a loyal customer portrait. A loyal client of travel services is a family-oriented client, travelling for a period of two weeks or longer, accompanied by the family, very often with children under 14, planning and booking holidays well in advance, attached to the place of making the booking (i.e., the travel agent).

Keywords: key client, behavioral loyalty, model of travel agency client loyalty, MLP (Multi-Layer Perceptron) neural network method

JEL: D12, M31

Introduction

The majority of approaches presented in the subject literature attempt to define the term “loyalty” within two categories—i.e., attitudes and customer behaviors (Dick and Basu 1994; Jacoby and Chestnut 1978; Oliver 1997). Similarly, the concept of consumer loyalty referring to tourist enterprises should be defined in a broader perspective. Paraphrasing Oliver's definition (Oliver 1999, 34–35), customer loyalty of travel agencies is defined as a deep-rooted customer persistence in repurchasing tourist offers or constant condescending approach to the preferred categories of tourist offers, resulting in repeat purchases of a particular brand or item from the travel agency's offer (behavioral loyalty) and propagating positive opinions about a particular enterprise (affective loyalty), which takes place in spite of marketing efforts of the competition, which could theoretically alter a customer's behavior (Michalska-Dudek 2014, 87).

The attempts to explain and describe mechanisms responsible for loyalty development in the subject literature appear in different research perspectives. Researchers describe factors influencing loyalty development, discover and analyze cause and effect mechanisms resulting in its occurrence, as well as study various states of this phenomenon intensity. Among different approaches to loyalty an attempt to describe it in the form of comprehensive models, which investigate not only factors but also how they influence loyalty development, is of great importance. Those loyalty models

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are based on: customer satisfaction (Lu and Yee 2001), brand (McAlexander, Kim, and Roberts 2003), enterprise image (Kandampully and Suhartanto 2000), social factors (Butcher, Sparks, and O’Callaghan 2001; Luarn and Lin 2003) and customer attitude (Dick and Basu 1994; Zins 2001). There is also worth discussing the so-called developed path models (SCSB, ACSI, EPSI) which currently constitute the most advanced and the most accurate tool (Fornell et al. 1996; Johnson et al. 2001).

The literature review confirms that while consumer loyalty to a destination and accommodation services constitutes a frequent objective of research, consumer loyalty to travel agents (entities dealing with the organization and intermediary services in the tourism industry) is rarely analyzed.¹ The above conclusions indicate the need for conducting further research and undertaking attempts to explain consumer loyalty in the tourism industry in Poland in this particular area (more in Michalska-Dudek 2017, 75–76).

The article presents the proposal of a client loyalty model, which may be expanded in the process of creating an optimum portfolio of clients by means of identifying and selecting key clients of an enterprise. The main aim of the paper is to identify the crucial factors determining the existence of behavioral loyalty of travel agency clients and also to describe the silhouette of a loyal customer of travel agency services.

1 Assumptions of the travel agency client behavioral loyalty model

The concept of relationship marketing concentrates on activities focused both on maintaining the existing clients and developing their loyalty. The selection of key clients is performed based on an identification and selection matrix (fig. 1) including two types of determinants, which define the relationship between a supplier and a client as well as a client and a supplier, namely:

- client’s attractiveness — factors resulting in an enterprise attentiveness to an existing or potential client, and
- relative power of an enterprise — factors resulting in a client’s distinguishing a given supplier from competitors.

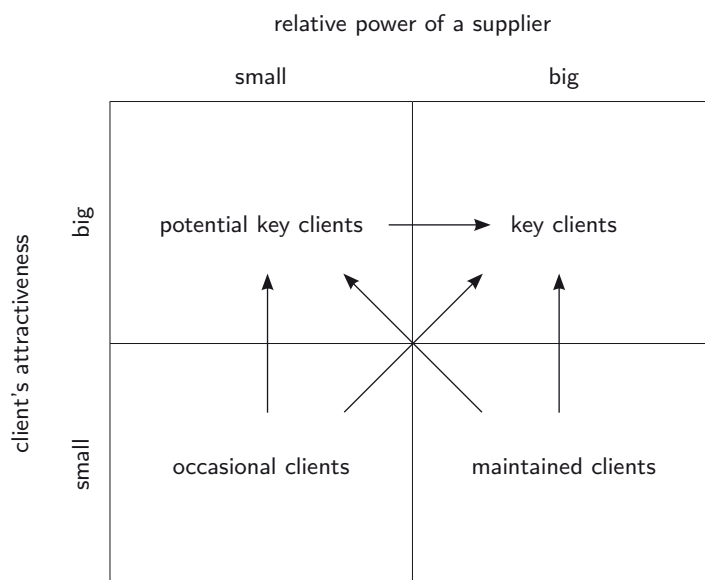


Fig. 1. Managing the client portfolio

Source: Cheverton (2001, 212)

1. Lee and Cunningham (2001) proved that perceived service quality, offer costs, and costs of leaving exert a significant impact on consumer loyalty in the market of travel agencies. Lee, Jeon and Kim (2011) examined how tourists’ expectations have a negative impact on their perceptions of the quality of an offer, whereas consumers’ motivations have a positive influence on them. However, the perceived quality of an offer has a positive impact on consumer satisfaction. An inverse relationship occurs between satisfaction and tourists’ complaints as well as the direct relation between customer satisfaction and loyalty (the more complaints, the lower the loyalty level).

Specifying a client's attractiveness and a supplier's relative power results in differentiating four categories of clients (Cheverton 2001, 206–209):

- Key clients—represent the category most desirable by enterprises, since they are the clients most satisfied with the existing cooperation. Key clients may also be taken advantage of as lead users – as individuals frequently using company services who, in a survey, are capable of indicating areas requiring innovation or improvement and are helpful in establishing long-term relations (see also Keiningham, Aksoy, and Williams 2009; Reichheld 2006).
- Potential key clients—i.e., a group of clients cooperation with whom stands the chance of becoming exemplary if only the company modifies its way of functioning. In this case the main objective is to find out the clients' expectations, reasons of their dissatisfaction, as well as company adjustment to meeting their needs. In order for the cooperation with this group to be successful no savings should be made regarding the provision of adequate resources and professional service. Those clients with whom cooperation is not developing, or no changes are expected in this matter, should be excluded from the group of customers with future potential.
- Maintained clients—who, in many respects, constitute the most difficult category, since the decision about quitting any investments in them, as well as directing means and efforts elsewhere, i.e. where they are more necessary, turns out to be difficult, but indispensable.
- Occasional clients—customers served by an enterprise when such activity meets current objectives of the company. They are not offered any promises which the company will not be able to meet but, at the same time, these clients are not referred to as unnecessary. This category of clients constitutes an income source which allows for cooperation development with key clients and potential key clients.

In the process of key client management an important role is played not only by these basket components which result in high profits, but also in managing this basket (Michalska-Dudek 2013, 36ff.). The process of maintaining clients starts primarily from the selection of proper ones, while the strategic component of loyalty programme construction is to define key clients to whom it will be addressed (more in Berry and Linoff 2004).

Loyalty management requires both design and direct adequate marketing activities to these clients who will most probably return to a given travel office and will remain its regular clients for a long time. Existing customers may be divided into groups demonstrating different levels of risk of leaving and chances for retention and making future purchase (fig. 2).

Based on historical data it is possible to construct a model for client loyalty forecasting. The process will be performed with usage of an artificial neural network method (Bishop 1995; Ripley 1996). In recent years the study of artificial neuron network models has aroused great interest. Artificial intelligence techniques have become an essential tool for economic modelling (Claveria and Torra 2014) and have been applied in many fields for prediction and classification. Artificial neural network methods were first introduced to tourism demand forecasting in the late 1990s. The results obtained in the study of Palmer, Montano and Sese (2006) provide information for researchers interested in applying artificial neural networks to tourism data forecasting. Similar findings were

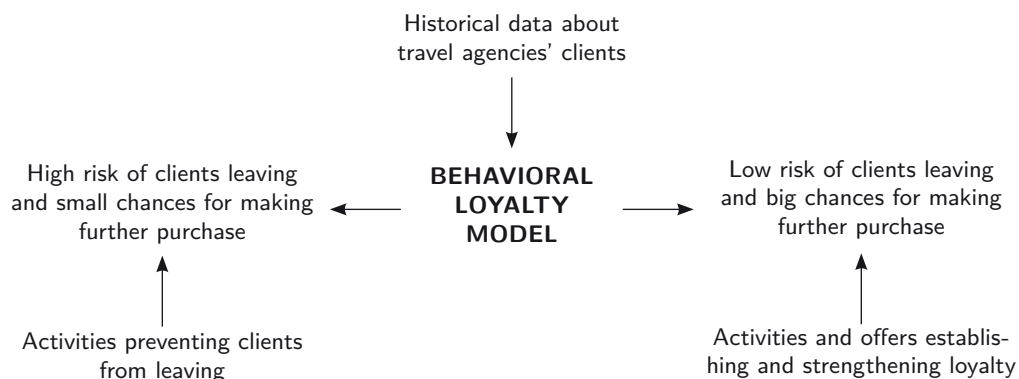


Fig. 2. Assumptions of travel agencies' clients behavioural loyalty model

Source: Authors' compilation based on Dudek and Michalska-Dudek (2011, 23), and Michalska-Dudek (2013, 39)

also obtained by Kon and Turner (2005) who confirmed that the neural network remains a highly accurate method significant candidate for future research in forecasting of tourism demand.

Artificial neural network models have two learning methods, supervised and unsupervised. The MLP (Multi-Layer Perceptron) is the most popular supervised network architecture in use (Bishop 1995). MLP is also known as a feedforward neural network is the neural network model most widely used in applied work, because it is capable of resolving a wide variety of problems. (Palmer, Montano, and Sese 2006, 783). The Multi-Layer Perceptron neural networks represent the development of classical perceptron concept (Rosenblatt 1958, 386–408) and are composed of one input layer, one output layer and one or more hidden layers.

The proposed model, by taking into account historical data covering the characteristics, activities and purchase history of clients, assumed the division of clients into groups presenting different levels of the threat to leave, on the one hand, and different opportunities for making further purchases of tourist events, on the other.

2 Prediction model for behavioral customer loyalty. An empirical study

The investigation of a behavioral loyalty prediction model was to determine which characteristics of services affect clients' level of behavioral loyalty. The analysis covered historical data, collected from the booking system, which referred to 3 923 bookings of tourist events made by clients in 44 travel agencies in the nationwide franchise network of travel agencies throughout Poland. A model based on an artificial neural network was constructed to forecast the occurrence of behavioral loyalty along with the example of its application and verification. Due to the fact that the correlations allowing input data calculation, based on variables taken from the accounting and booking system of the travel agency network, were not known, it was considered justified to apply neural networks.

In the suggested model each variable describing a client stands for one neuron of input layer. Output layer is represented by a "loyalty level" variable understood as the probability of a client's return after making the first purchase. While developing a neural model only the explored data were used, whereas the neural network was learned based on the mode with a teacher. This mode aims at modelling an unknown correlation (between the set of input data and the set of output variables) and allows extracting knowledge implicit in the explored data, offering an effective instrument, both diagnostic and prognostic.

The analysis covered the data described using the following input variables (observations of particular input variables from x_1 to x_{14}), where:

- bookings
 - x_1 —purchase value
 - x_2 —purchase method
 - x_3 —payment form
 - x_4 —number of purchased offers
 - x_5 —number of children under 14 included in the booking
 - x_6 —time between the booking date and the date of the tourist event commencement
- tourist events
 - x_7 —tourist event organizer
 - x_8 —place of purchase
 - x_9 —duration of the tourist event
 - x_{10} —price of the tourist event
 - x_{11} —destination
- client's description
 - x_{12} —place of residence
 - x_{13} —client's age
 - x_{14} —client's sex

The output variable was the behavioral variable—customer loyalty of the surveyed travel agency (y_i). For archived data, the variable took values: 0—if the customer did not make a repurchase, and 1—if he/she did it. In turn, for new customers, it is a variable in the range [0; 1] understood

as the probability of a new customer returning after the first purchase. Such an instructed network was used to calculate the likelihood of a particular customer returning to the service provider.

Depending on the adopted risk level, managers of a tourist enterprise may adopt a specific threshold value that divides consumers into two groups—perspective and non-perspective. For example, it can be assumed that the value of 0,7 of the variable y divides the clients into two classes and if it assumes values from the interval $[0; 0,7)$, the manager can expect that the client will not make another purchase, whereas it will be in the range $[0,7; 1]$, then the manager can forecast his return and subsequent purchases of tourist events.²

Nnet package of R environment using softmax activation function and back propagation learning algorithm were used to perform calculations in the study.³ All data has been transformed to single numbers by cut R function. Due to calculation complexity of the neural network training procedure, in this experiment only two neurons were used in the hidden layer. Trials with a bigger number of hidden layers in nnet R library have led to memory crashes. The objects from the booking system were arbitrarily divided—in the ratio of 3 : 1—into a teaching and test set. The data set used in the conducted network learning study, called the training set, contained data on 2 700 reservations. The collection records 680 cases of customers returning and re-purchasing tourist offers.

After 200 presentations of the training set, the test showed that the network learned to disseminate the training set (100%), while the test set recognized 92,2% of cases. This result of classification accuracy of the MLP neural network can be considered satisfactory and sufficient

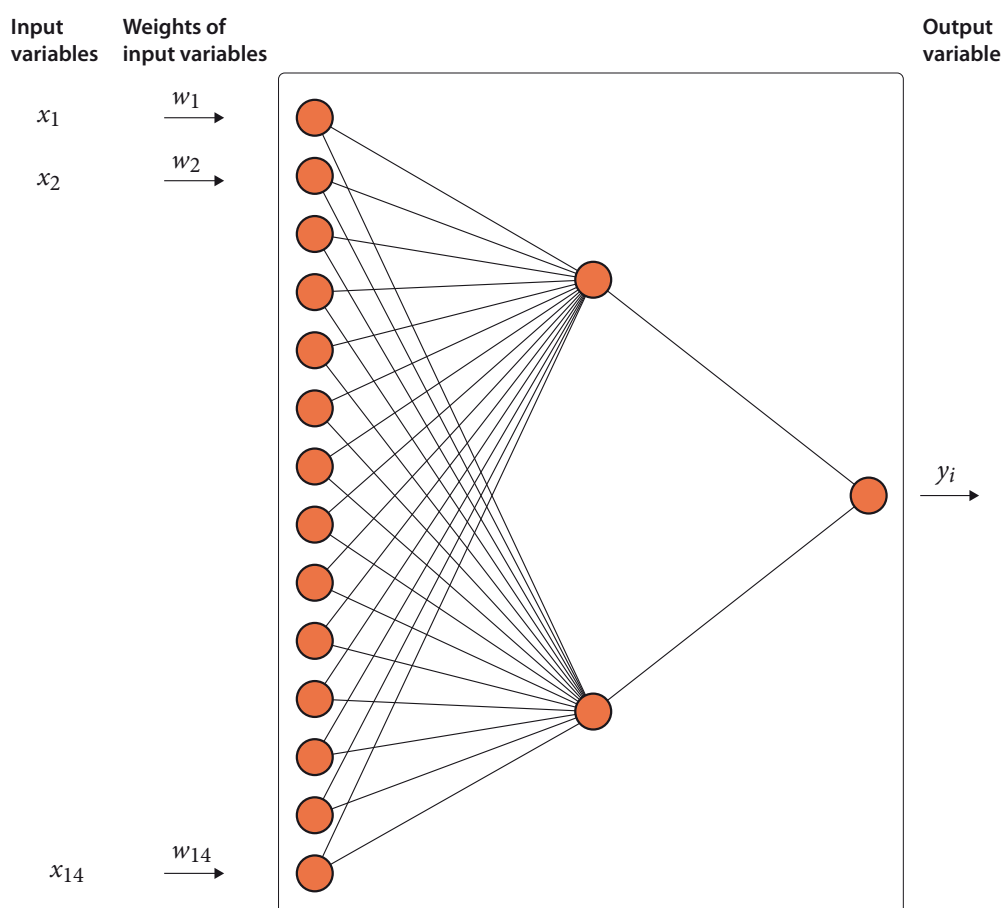


Fig. 3. Prediction model for behavioral customer loyalty of the analyzed entity based on the MLP neural network

Note: y_i —output variable observations (behavioral loyalty of tourist services' clients); x_i —observations of particular input variables, w_i —weights of input variables ($i = 1, 2, 3, \dots, 14$).

2. [In the journal European practice of number notation is followed—for example, 36 333,33 (European style) = 36 333.33 (Canadian style) = 36,333.33 (US and British style).—Ed.]

3. Based on Statsoft Electronic Statistics Textbook [[:]] <http://www.statsoft.com/textbook>.

(average prediction error was 8,88%). Results of the supervised network learning process and the ultimate weights assigned by the neural network to the particular input variables are presented in table 1. Empirical verification of the theoretical model based on artificial neural networks provided the identification of factors determining behavioral loyalty of tourist service clients of the examined entity and the division of clients into groups presenting different probability levels of making subsequent purchases.

Tab. 1. Ultimate weights assigned by the MLP neural network to the input variables

| Input variable | Weight |
|--|--------|
| x_1 — purchase value | 2,32 |
| x_2 — purchase method | 3,47 |
| x_3 — payment form | 4,63 |
| x_4 — number of purchased offers | 18,10 |
| x_5 — number of children under 14 included in the booking | 12,74 |
| x_6 — time between the booking date and the date of the tourist event commencement | 17,32 |
| x_7 — tourist event organizer | 8,40 |
| x_8 — place of purchase | 11,87 |
| x_9 — duration of the tourist event | 42,24 |
| x_{10} — price of the tourist event | 1,46 |
| x_{11} — destination | 3,51 |
| x_{12} — place of residence | 3,32 |
| x_{13} — client's age | 7,97 |
| x_{14} — client's sex | 5,88 |

Source: Author's work based on calculations performed using nnet package of R computational environment

Conclusions

The analysis of ultimate weights assigned by the neural network to the particular input variables allowed us to present conclusions about the crucial factors determining the occurrence of behavioral loyalty in the analyzed tourist enterprise. The most important determinants of behavioral loyalty were: duration of the tourist event, number of purchased offers and time between the booking date and the date of tourist event commencement. Both the place of purchase and the number of children under 14 included in the booking should be also considered as significant determinants of behavioral loyalty (fig. 4).

From the perspective of strengthening the loyalty of tourist enterprise clients, it is crucial to identify the nature and determinants of loyalty manifested by the consumers of tourist products. Key — loyal — clients of the analyzed travel agencies' network purchase more (when booking tourist events for several people), they travel for a longer period of time (their trips refer to events which usually last 10, 14 days or more), they plan their holidays well in advance (using offers of the "first minute" type, as soon as the catalogues are issued by organizers for the next season, they are the least to expect discount deals and "last minute" promotional sales) — which confirms that customer loyalty affects financial results of enterprises, contributing to the increase in turnover (revenues) from the purchases made by loyal clients, and thus generating profits for the organization.

In the process of key client management an important role is played by the activities and offers establishing and strengthening loyalty. It is possible to divide travel agency clients into groups characterized by a different level of threat to leaving the company, on the one hand, and different chances for making further purchase on the other. Different activities should be taken up, with reference to both groups of clients distinguished by the model, by travel office managers. Using information obtained from the model forecasting client loyalty towards a given travel agent can be helpful in distinguishing key — loyal clients, and in designing and addressing to them adequate

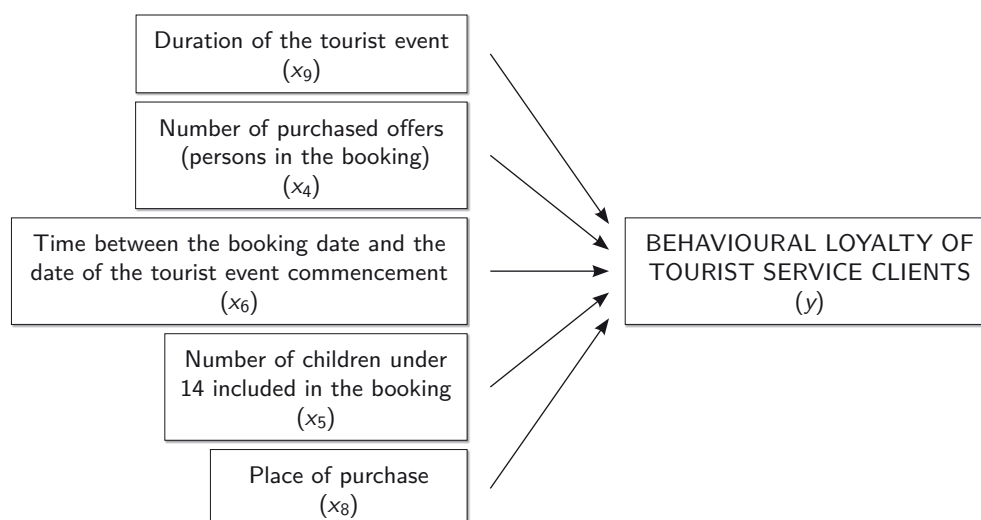


Fig. 4. Factors determining the occurrence of behavioral customer loyalty of tourist events in the nationwide network of travel agencies in Poland

Source: Author's compilation based on the conducted studies and calculations using nnet package of R environment

marketing activities. From the other side, clients classified as “disloyal” may become the target of preventive measures, while the perspective ones may become the recipients of new product offers—cross-selling or offers for extending the existing cooperation—up-selling. The presented model may become a useful tool for travel agents who would be able to reach loyalty programme participants in a targeted manner and minimize losses resulting from sending special privileges to unprofitable and unattractive clients.

The reflections outlined in the study certainly point to the need for travel agencies to focus their efforts on supporting processes aimed at loyal customer development, resulting in strengthening their competitive position, obtaining repurchase guarantees, and also minimizing the risk ingrained in future marketing activities. The loyalty development of tourist service clients should be considered the key value for the functioning of travel agencies.

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