



A voice in the skies: Listening to airline passenger preferences



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ABSTRACT

This study aims to identify the impact levels and priorities in the service expectations that passengers have when identifying a preferred airline. The results are based on probabilities and impacts, and can help airlines to accurately understand the preference criteria of their passengers. The priorities of the passengers may differ according to the airline chosen; therefore, the probabilities shown in this study can inform senior airline managers about the passenger perspective. This study uses the Stochastic Multi-criteria Acceptability Analysis-2 (SMAA-2) method. SMAA-2 identifies the priorities and impact levels of passengers' expectations on airline selection, and the ranking of alternative firms according to the probability. According to the obtained results, Airline 3 (AF_3) is the most preferred airline with the highest confidence rate. This airline operates based on a low-cost model that allows passengers to choose additional services for additional charges. The passenger expectations that have the highest impact on the preference when selecting an airline are 1) ticket prices, 2) punctuality, and 3) booking convenience. Free in-flight food and beverages, the variety and quality of the food and beverages, and voyager miles programs for loyal customers are found to have no impact on the ranking of airlines. The expectations identified by the passengers in this study are related to the outcome quality dimension, with services dominated by flexible features. The findings of this study define the passenger as a rational decision maker who is price sensitive.

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1. Introduction

In any service company, high-quality service results in the company achieving a core competitive advantage for sustainable improvement and for profitability (Chen, 2008). To achieve a core competitive advantage over their rivals, service managers should listen to their customers' feedback early in the transaction process, and should effectively and accurately respond to their identified needs (Zeithaml et al., 1996). Customers are generally very aware of service quality, rising costs and competition; this customer sophistication forces company managers to provide distinct and differentiated services from their rivals (Aksoy et al., 2003; Ukpere et al., 2012).

Frequently, airlines measure their customers' perception of the services provided, without having sufficient knowledge about their customers' expectations (Chen and Chang, 2005). Gilbert and Wong

(2003) emphasize the importance of airlines understanding their customers' expectations of service quality. Hence, how airlines prioritize the expectations that their customers have when determining a preferred airline is very important (Kim and Lee, 2011). Misreading or miscalculating customer expectations may create serious problems in airlines' resource allocation decisions (Chen and Chang, 2005).

This study aims to identify the impact levels and the priority ranks of the service expectations that passengers have when determining a preferred airline. The study results can help airlines to understand the preference criteria of passengers based on different probabilities and impacts. The passengers' priorities may differ according to the airline that they choose; therefore, the probabilities shown in this study can inform the senior management of such airlines about the passengers' viewpoint.

The study uses the Stochastic Multicriteria Acceptability Analysis-2 (SMAA-2) method, a multicriteria decision-making (MCDM) tool developed by Lahdelma and Salminen (2001). SMAA-2 shows the priorities that passengers assign to their selection criteria when choosing an airline, and further shows the impact levels of the

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passengers' expectations. SMAA-2 also ranks the firms using the probability information. Kaliszewski (2000) noted the gap in knowledge about the decision-making methods used when selecting an airline. Liou et al. (2011) identified the expectations that passengers have of airline service quality, using conventional statistical and MCDM methods. More studies on airline selection use conventional statistical methods compared with those that use MCDM methods (e.g., Kuo, 2011; Tsaur et al., 2002). To the best of the authors' knowledge, this study is the first to identify the priorities and the impact levels of the expectations that determine the preferred airline firm based upon the probability.

The second section of this paper introduces the study material and the research methodology. The third section focuses on the survey instrument and the data. The fourth section uses SMAA-2 to identify the impact levels and the priorities of the service expectations of the most preferred airline for the passengers. The fifth section includes the results and discussions, and section six concludes the paper.

2. Material and research methodology

SMAA-2 uses reverse weighting space analysis to define the criteria effects as to 1) the probability of an alternative being in any rank, and 2) the preference of an alternative. This analysis uses weighting information to find the most preferred alternative. SMAA-2 uses three parameters to rank the alternatives: the rank acceptability (RankAcc) index, the central weight vector (CWV), and the confidence factor (CF). The RankAcc index determines the occurrence probability of an alternative in any order. The alternatives with the highest acceptability for the best ranks are the best alternatives (Tervonen and Figueira, 2006). The CWVs are the impact levels of the criteria that affect the rankings of the alternatives, and the CFs are the reliability scores of the rankings (Lahdelma and Salminen, 2001).

SMAA-2 uses a five-step process to turn the customer's voice into a competitive advantage (Hokkanen et al., 2000). 1) Identify the decision alternatives (DAs) and the decision criteria (DC) to be used in the comparison. 2) Select the decision makers (DMs) who compare the alternatives, and determine the criteria that the DMs use to evaluate the alternatives. 3) Determine the preference information for each criteria weight according to the DMs. 4) Determine the RankAcc indices of the alternatives. 5) Determine the CWV and the CF for each alternative's ranking.

3. Survey instrument and data

The airline service evaluation survey has four sections. The first section consists of seven questions on demographic characteristics, and on flight services use. In the second section of the survey, the passengers score each of the DC between 0 and 100. A 0 score means that the criterion has no importance for the passenger in terms of flight service expectation. A 100 indicates the highest importance for the passenger in terms of flight service expectation. In the third section, the passengers select the most important DC for flight service according to their expectations. They select as many DCs as they like in this section. The weighted average score for each DC is calculated from the expectation scores given to the DC in the second section, and from the chosen criteria in the third section. The scores are then normalized to obtain the criteria importance weights. The fourth section considers three specific airlines. This section determines the satisfaction scores of the passengers for each airline on the 24 listed DC. The passengers' satisfaction is measured using a 1–5 Likert scale, where 1 represents very dissatisfied and 5 represents very satisfied. The results are shown in Table 2.

This study uses Goss and Leinbach's (1996) suggestion to use a focus group study as a tool to generate questions to be tested in research. Accordingly, three focus groups were formed. Each group was composed of four passengers who flew at least once with each of the three airlines in the last year. Previous studies on airline service expectations were used to prepare a set of questions for the focus groups (see Table A1 in the Appendix for a summary of these studies). During the focus group study, the researchers, in conjunction with a trained moderator, asked the passengers to define their *expectations relating to an airline* and the *preferred airline features* in their own words. The focus group sessions lasted 60–90 min, and were recorded to be transcribed later. An observer was present to take additional notes on the sessions. The participants also completed a demographic questionnaire. Out of the 12 respondents, seven were female, and the average age was 30 years. Seven of the respondents were aged 27–45 years, two were aged 46–54 years, and three were aged 55 years or older. The focus groups' comments were then analyzed by the researchers, and a consensus reached on the final DC.

The questionnaire was evaluated by managers from each of the airline firms participating in the study. Next, a pilot study was performed on 25 participants who had flown at least once with each of the airlines, to establish if the formulated questionnaire was correct and understandable. Eleven of the participants were female, and 14 were male. Twelve of the participants were aged 35–50, and 13 were aged 51–65. Following the pilot survey, some minor changes were made to the survey form, and the content validity of the survey was deemed adequate.

To assure a level of homogeneity in the sample, as mentioned in Mikulić and Prebežac (2011), the respondents were taken from only Turkish economy class passengers who fly from the largest airport in Turkey (Atatürk International Airport) to various domestic destinations. The survey was administered over one weekday and one weekend. The questionnaires that were distributed to the passengers were accompanied by a covering letter explaining the objective of the survey, and assuring the confidentiality of all of the respondents. The questionnaires were distributed at each boarding gate and were collected at the exit doors after the baggage claim point. The probability of the phenomena occurring was calculated as 0.8 and the probability of it not occurring was taken as 0.2. The sample error was 0.05 and the significance level was $\alpha = 0.05$, meaning that the sample was appropriate as cited in Arya et al. (2012). The sample size was computed as 245, considering that the population size was unknown. The sample size was found to be sufficient at the 95% confidence level. Participation was voluntary. A total of 450 questionnaires were distributed, and the response rate was 77.3% (348 valid responses). The demographic and flight service use data are summarized in Table 1.

To evaluate the homogeneity of the survey, the reliability is calculated using Cronbach's α coefficient. The result is $\alpha = 0.846$, showing that the survey is highly reliable.

4. Using SMAA-2 in the airline industry

This section follows the SMAA-2 steps outlined in Section 2, to analyze the customers' decision-making process when choosing to fly on one of Turkey's three largest airlines that service the domestic market. The section identifies the impact levels and priorities of the service expectations that passengers have on the most preferred airline.

4.1. Identify the decision alternatives (DAs) and the decision criteria (DC)

Turkey has a highly competitive oligopolistic domestic airline

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