



# A robust hybrid decision model for evaluation and selection of the strategic alliance partner in the airline industry



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## ARTICLE INFO

### Article history:

Received 1 February 2015  
Received in revised form  
27 December 2015  
Accepted 27 December 2015  
Available online 8 January 2016

### Keywords:

Strategic alliance  
Airline  
AHP  
Fuzzy TOPSIS  
India

## ABSTRACT

Owing to the cut throat competition and economic uncertainty in the market, airlines are focusing on strategic alliances for satisfying customer needs, especially in the current time which is dominated by global integration, demanding customer and fast changing technologies. This strategy is widely adopted by airlines. However, the selection of strategic alliance partner is a very decisive decision, and this selection process engrosses a number of complex processes which is result of compound reflection of associated various factors. In addition, the decision makers may be inconsistent in their views and preferences, arising due to imperfect information or intrinsic conflict between various departments. This paper presents a model based approach of an analytic hierarchy process (AHP) for evaluation of criteria and fuzzy technique for order performance by similarity to ideal solution (FTOPSIS) for the selection of strategic alliance partner. A case of Indian airline industry demonstrates the application of the proposed approach. Eventually, robustness of the model is demonstrated by sensitivity analysis.

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## 1. Introduction

Airlines have joined their hands in response to changes in economic, market and regulatory conditions and formed strategic alliances (Albers et al., 2005). An evidence of this can be seen by scores of alliances that have been established in the recent years such as Star Alliance, Sky Team and One World etc. that constitute approximately 70% of passengers and turnover in the entire world market (Holtbrugge et al., 2006). Tangible benefits in making strategic alliance are attracting more passengers, integration of network through expansion of routes and cost reduction in airline operations through joint baggage handling, gates and check-in counters, code-sharing, joint use of lounges, and exchange of flight attendants (Merkert and Morrell, 2012; Zhang et al., 2004). Moreover connectivity of arrival and departure flights can be improved by making connections with strategic partners. Coordination among strategic partners is the key performance indicators. However, poor coordination could lead to the loss of the partners' that had been seen in the case of Swissair (Park and Cho, 1997). It has been seen that the performance of the strategic alliance directly depend on the selection of partners (Mohr and Spekman, 1994).

One of the objectives of forming strategic alliances is to choose such partner who can share his resources and capability where the airline lacks. A healthy relationship between strategic partners would require trust, commitment, good culture and synergy among management.

Previous research studies in this area have suggested that selection of the partners is beneficial when strategic partners assimilate their core competency, technology and share their resources. Airline should concentrate on those routes which have comparative advantages apart from extension of her network via the sharing routes with partner (Goh and Yong, 2006). Strategic partners may invest enough time and efforts to effectively utilize the synergy created through alliance. That will come through focus on the internal structure and the culture of the organizations to encounter diverse external requirements. Passengers experience will depend on the total package of services offered by carrier without knowing that these services are presented by airline with the support of strategic partner and such partner would derive synergy and will create win–win situation for both. Partner selection and evaluation is important because of the increasingly critical role in a firm success. However evaluation of the criteria for selection of the strategic partner is strategic decision and has got much attention recently. Since previous studies shows that many researchers have recognized the importance of the selection of

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strategic partner but very few studies suggested empirical analysis for the selection of the strategic partner. And in Indian context there is no study identified in literature so far for selection of strategic partner. However airline industry of India is a key player in global market and Indian economy has huge potential in terms of demand and growth.

This is new research paradigm and it has many research gaps still to be explored (studies about strategic partner selection and evaluation are very limited in Indian context); and particularly, it becomes important when airlines are looking towards growth of the business by expanding their networks. Therefore, the need arises to evaluate strategic partner selection to ensure shared benefits in the alliance.

### 1.1. Research motives

This study is an attempt to achieve the following objectives:

- To identify and prioritize the evaluation criteria for selection of strategic partner;
- To support in selecting the best strategic partner among possible alternatives.

This study attempts to identify, evaluate the strategic alliance partner criteria and to develop research framework to help in selecting the best strategic partner among existing alternatives. However, there are many criteria and their sub-criteria for partner selection those include various dimensions which require coordination and collaboration among different departments of selected partner. But consideration of criteria and their evaluation should focus on operational environment and contextualized according to geographical dimension. Therefore, it is important that the selection criteria should focus on cooperation, capability, commitment and compatibility of the partners. Identification and evaluation of criteria, for partner selection along with their sub-criteria is done by decision making group. Decision team has 4 members (1 from Academia and 3 from industry) these members have more than 10 years of experience in their fields. After extensive literature review and experts opinions, the decision making group has finalized criteria the recent development of strategic airline alliances selection criteria. Although each criterion is very important to maintain and sustain good customer service but presence of multiple criteria and the views from the experts will increase the complexity in selection of the strategic partner. To show the real-life application of the proposed combined AHP-FTOPSIS approach, a case example of Indian airline industry is presented. Selection of the partner while considering different criteria is multi-criteria decision making (MCDM) problem and involvement of fuzziness in decision; makes decision structure flexible. And this fuzzy based flexible systematic decision support tool provides flexibility for the selection of the strategic partners. The application of AHP has been seen in many multi-criteria decision making (MCDM) problems. But integrating one MCDM with other decision support system would improve our decision making process. This study utilizes the AHP to get the weights for criteria and these weights are used in Fuzzy TOPSIS approach to select the right strategic partner for airlines. The rest of this paper is planned as follows. Section 2 highlights the background of the research. Section 3 deals with the problem. Section 4 describes the methodology and application of the model for selection of the partner is given in Section 5. The results and discussions are reported in Section 6. Section 7 shows the sensitivity analysis outcome. Section 8 represents the managerial implications of the proposed framework and concluding remarks are given in Section 9.

## 2. Background of the research

Many research studies have been carried out and it was found that creating strategic alliance is win–win strategy for airline partners. Selection of the strategic partners involves various dimensions that had identified and recognized in the literature (Mockler and Carnevali, 1997; Bissessur and Alamdari, 1998; Brouthers et al., 1995; Evans, 2001; Geringer, 1991; Luo, 1998; Park and Cho, 1997). Zhang et al. (2004) identified that due to the alliance; access to the different parts of the world made possible at economical rates and increased competition among airlines. Gomes Casseres (1996) and Yoshino (1995) presented that the alliance as a venture between firms based on the cooperation and partnership followed by sharing resources, risks and benefits but had limited control and incomplete contracts. Rhoades and Lush (1997) stated that strategic alliances had reduced airlines operating cost significantly. Luo (1998) distinguished the selection criteria of strategic partner into three broad areas they were operational efficiency, cooperation and financial stability. Holtbrugge et al. (2006) presented that alliances achieved synergy through sharing infrastructure like lounges and check-in facilities, along with code-sharing agreements and the interchanging of flight-crew personnel and aircraft and also identified the importance of role and responsibilities of HR aspect after strategic alliance. Prior empirical studies on the alliances were done by Gellman Research Associates (1994), Park and Cho (1997), Oum et al. (2000), Park et al. (2001), and Zhang et al. (2004) and Proposed that profit, performance and productivity could be improved by forming alliances. Dev et al. (1996) studied alliances strategies from various perspectives like theory of games, network benefits, economics and internationalization of the firms. Brueckner (1997) examined that code sharing would beneficial in terms economic of density for airline. Fan et al. (2001) analyzed the factor behinds the strategic alliance and concluded that globalization and liberalization were the main reason for forming the airline alliances along with other factors. Flores-Fillo and Moner-Colonques (2007) suggested through strategic alliance airline can provide smooth services to their passengers by adjusting flight schedules, gate procedures and joint frequent flyers programs. Liou et al. (2011) proposed hybrid fuzzy ANP model to select the strategic partners and considered the various criteria like marketing, product/service, computer systems, equipment servicing and logistics along with different sub-criteria. This model did not include one of the important criteria financial benefits achieved through alliance and used single MCDM support system. Airlines make strategic alliance to gain economic and financial incentives. In the existing literature few studies have utilized integrated MCDMs approach to evaluate and select strategic partner for airline industry like Liou et al. (2011) applied Fuzzy DEMATEL and ANP based model for selection of the strategic partners and used organization, service, computer systems, equipments, partner and strategy as criteria and defined various sub-criteria under them. This model was proposed for Taiwanese airline. However various studies are available which applied combined MCDMs in different areas.

Recently Jiang et al. (2015) presented airline alliance model based on game theory and identified that expected outcomes may be multiple if four airlines players are involved in their case they have taken two local airlines and two global airlines. Chao and Kao (2015) proposed fuzzy AHP based model for selection of strategic alliance partner for Taiwan-based China Airlines and used 14 selection criteria and identified three important dimensions while selecting appropriate strategic partner. These were enhanced flight route and frequency, increased revenue, and improved load factor. This study utilized single MCDM support system and robustness of the presented approach is not verified.

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