Fuzzy QFD for LCC Strategic Decisions in Thailand:
A Case Study of Nok Air and COVID-19 Recovery

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ABSTRACT

This study focuses on the impact of the Covid-19 crisis on low-cost carriers (LCCs), particularly in comparison to full-service airlines (FSAs). With a target segment of price-sensitive leisure travelers, LCCs have been significantly affected. The objective of this paper is to analyze customer requirements for Thai LCCs during the Covid-19 recovery period and identify strategic improvement decisions accordingly. Nok Air, a well-established LCC in Thailand, is used as a case study. The proposed fuzzy QFD approach is employed to prioritize customer requirements, suggest strategic decisions, and enhance operational practices for the airline's recovery. Key findings include positioning as a premium LCC, offering premium services, increasing ancillary revenue, and improving aircraft utilization. This research is the first to apply fuzzy QFD to prioritize strategic decisions for managing LCCs during the Covid-19 recovery, aiming to enhance customer satisfaction and performance ratings set by the management team.

INTRODUCTION

Since the liberalization of the Thai aviation industry in 2001, the country has witnessed significant growth until the COVID-19 outbreak. Before the spread of the coronavirus, there was a projection of robust growth in the aviation industry from the development of global trade, the increase in transportation of air cargo, and the excessive demand of the tourism economy (Dube et al., 2021). Soon after the realization that COVID-19 was a global concern, the government around the world announced the closure of countries, imposed travel restrictions, and enforced a policy of national lockdowns. The virus spread to more than 200 countries, causing outrageous panic among the world's

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citizens as there was no vaccine or proper medical treatment back to date (Warnock-Smith et al., 2021). No previous pandemics caused a substantial impact for a prolonged period as COVID-19 has. Because travel and tourism are viewed as a major transmission pathway among infected people, the airline industry has been particularly hard hit by the pandemic. The sector was under pressure from various shocks, resulting in the collapse of airlines, a shortage of liquidations, and bankruptcies. Now, as the world adapts to living with the virus, it is imperative to examine the recovery or post-pandemic period for the aviation industry. As we embark on the path of recovery, it is evident that the aviation industry is confronting a changed landscape shaped by the long-lasting consequences of the pandemic. Air travel, which was previously considered a potential means of disease transmission, will remain under the influence of evolving travel patterns, stringent health and safety measures, and the shifting preferences of a more vigilant and health-conscious traveler demographic.

In the aftermath of the 2001 deregulation of the aviation market in Thailand, the industry witnessed heightened competition from low-cost carriers (LCCs), also referred to as low-cost airlines (LCAs). Both terms are used interchangeably within the aviation sector and describe airlines that prioritize a cost-efficient business model, aiming to provide passengers with affordable travel options. In 2017, LCAs played a significant role in Thailand, contributing to 47% of the total passenger traffic. Notably, they tripled their capacity in terms of available seat kilometers (ASK) on domestic routes between 2014 and 2017 (CAPA, 2018). However, with the LCCs' reliance on lower-cost customer segmentation, the earlier assessment showed that the pandemic's impact on the LCCs was immense due to the reduction of leisure travel and price-sensitive customers (Kam et al., 2022). Although the airline industry is opening up, how the airlines can realign their business in the 'new normal' era in more sustainable ways is still a significant challenge. The complexities of managing the LCCs during a COVID-19 recovery period are:

1. There are several business and operational factors for the LCCs to consider; without a systematic approach, the airlines cannot prioritize the customers' real needs.
2. There is an interrelationship between customers' requirements and the airlines' strategic decisions as the operational practices; without some methodology, the airlines cannot implement the proper strategy to respond to the customers' needs.

For these reasons, this paper proposes a systematic fuzzy quality function deployment (QFD) approach to evaluate the strategic decision of LCCs in Thailand to meet customers' requirements during a COVID-19 recovery period. A QFD is a customer-driven quality management system that ensures customer needs are integrated into the production process of product development. The QFD method has been successfully applied across the industry, including in product development, quality management, engineering decision-making, supplier selection, and strategic management in logistics and aviation (Weber et al., 2013; Bulut et al., 2016.) A house of quality (HOQ) analysis is fundamental and of strategic importance in the QFD process, as the customer needs are identified, the company's competitive priorities are incorporated, and the requirements are then converted into appropriate measures to fulfill the needs. The QFD method is therefore considered suitable for this analysis, and this paper is the first to apply the QFD method to manage the effect of the pandemic.

The objectives of this paper are:

1. To identify and prioritize the strategic decisions regarding the airline's operational practices to LCCs in Thailand to meet customers' requirements during a COVID-19 recovery period.
2. To demonstrate the application of a fuzzy QFD method in the aviation industry to manage strategic decisions.

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