



# Integration of Kano's model into FQFD for Taiwanese Ban-Doh banquet culture



Ling-Zhong Lin<sup>\*</sup>, Huery-Ren Yeh, Ming-Chao Wang

Department of Marketing Management, Shih Chien University Kaohsiung Campus, 200 University Road, Neimen, Kaohsiung 84550, Taiwan ROC

## HIGHLIGHTS

- This research provided an integrated framework to assess the Ban-Doh industry.
- FQFD and the fuzzy Kano categorization were performed to offer competitive benefits in service designs.
- The final weights of importance (convergence value) of service designs were determined.
- The research generated the short-term, mid-term, and long-term developmental strategies for the Ban-Doh industry.

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## ABSTRACT

Recent studies show that hospitality and services can, if attractively designed, elicit positive responses from guests or customers. Although responses are individual and highly subjective, Fuzzy Quality Function Deployment (FQFD) may provide a competitive advantage to those who are able to read and interpret customers' responses and needs in terms of hospitality services. This study introduces an integrative framework of Kano's model and FQFD applied to Taiwanese Ban-Doh banquet services. Kano's model with fuzzy sets was used and integrated into the FQFD method to show the relation between service attributes and customer responses. Kano's model categorizes service attributes into three major groups: Must-be, One-dimensional and Attractive. The findings of a case study involving six senior Ban-Doh chefs and 80 guests who attended Ban-Doh banquets are presented. By focusing on the quality of service characteristics that satisfy customers, this study enables service providers and managers to determine the extent to which they can prioritize the improvement of service design in Ban-Doh banquet services to satisfy customer expectations.

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## 1. Introduction

Service industries have been the source of economic leadership for most developed and developing countries in the past two decades. Concurrent to economic growth, Ma, Tseng, and Yen (2002) noted that economic development and the change in standards of living have caused changes in customer consumption patterns. These include not only with tangible goods but also with intangible services. Therefore, the management of new service development has become an important competitive concern in many service industries. From a service perspective, designing a service means defining an appropriate mix of tangible and intangible factors (Goldstein, Johnston, Duffy, & Rao, 2002) and the service concepts should be designed for the realization of customer needs and

achieving service performance. Service attributes and satisfaction issues should, then, be embodied in the service design stage to ensure the quality of service offerings.

The idea of service design is to implement high service quality from the very beginning by considering and responding to customers' expectations in each service process (Edvardsson, 1997). The goal of service design can be described in terms of attracting and keeping customers who are satisfied, loyal and speak well of the company. Thus, the service sector should aim to optimally allocate the limited resources to design a service process that can satisfy customers' needs. In this regard, most of the existing research suggested that the role of service concepts, in service design and development, is to define the how and what of service design and to link them to customer needs (Goldstein et al., 2002; Moritz, 2005; Wang, 2007).

Despite increased customer-oriented marketing efforts in the service industry, relatively little attention has been given to the service design and processes of a banquet. Although most research

<sup>\*</sup> Corresponding author. Tel.: +886 7 6678888x4251/5712; fax: +886 7 6679999.  
E-mail address: [ling@mail.kh.usc.edu.tw](mailto:ling@mail.kh.usc.edu.tw) (L.-Z. Lin).

studies have focused on measuring customer perceptions of service quality and satisfaction (Lee, Cho, & Ahn, 2012; Qu, Ryan, & Chu, 2000; Tsaur, Chiu, & Huang, 2002; Tsaur & Lin, 2004), few studies have analyzed the banquet for specific guidelines on how to design services to meet the quality standards expected by customers. The existing service quality and satisfaction guidelines were developed chiefly as tools to diagnose service performance and to understand customers' purchasing behavior; however, researchers typically do not actively consider the service design processes that support the marketing initiatives of the banquet culture.

In Taiwan, the increase in high quality banquet activities has contributed to the outstanding growth of the overall profit of Ban-Doh cuisine. The Ban-Doh banquet business is quite different from the banquet business of the hotels or the Chinese restaurants in Taiwan. The Ban-Doh chef is in charge of the entire banquet. However, the traditional Ban-Doh banquet is facing aggressive competition because the food and beverage industry, led by hotels and restaurants, has recently expanded their market to provide catering services in Taiwan (Cheng, 2011). Changes in local customs and dietary habits have led many people to host banquets at restaurants or hotels. The model of the Ban-Doh banquet is gradually deteriorating and becoming more of a catering service. These factors have diminished the traditional warmth of a Ban-Doh banquet, and they are changing the whole nature of this event.

The purpose of this study is to investigate the perceptions of the Ban-Doh banquet event in Taiwan in terms of the service attributes that would cause consumers to choose Ban-Doh over other alternatives. This research provides vital information for Ban-Doh banquet owners, examining the tangible and intangible service characteristics that influence the decision-making of consumers. This study also offers service design principles for the Ban-Doh banquet people. Consequently, an integrative framework was developed to achieve these objectives. The proposed framework is divided into two phases: the analysis phase and the design phase. In the analysis phase, the planning process of the Ban-Doh banquet is clarified and the various requirements of customer service are examined and mapped into components using Fuzzy Quality Function Deployment (FQFD) approach. The study also integrates Kano's model into FQFD to categorize the service characteristics and proposes a revised model to increase customer satisfaction; this information should offer guidelines regarding the importance, priorities and direction of Ban-Doh banquet development. The analysis results will assist service designers in creating design solutions for Ban-Doh banquet services. This study also provides practical insights into which service designs of Ban-Doh banquets deserve more attention based on their significant effects on customer needs.

## 2. Literature review

### 2.1. The concepts of service design

Service design is considered as a new and fast-growing research territory that has made researchers rethink the meaning of service design and begin to build service principles (Moritz, 2005; McCabe, Sharples, & Foster, 2012). According to the interpretation of Tan, Matzen, McAloone, and Evans (2010), the purpose of service design is to improve service quality, facilities, and communications consistently via the process of the interactions of service providers and customers. Service design is a component of the service process that attempts to satisfy and cope with the demands of the service industry by offering a systematic guide to service providers. Shostack (1984) commented that quality service design must be established systematically and consistently and must be equipped with easy-to-use features that allow consumers to enjoy effective

service processes. From the perspective of service experiences, Lee and Chen (2009) suggested that the scope of service design should be an integral service experience beginning with consumers' expectations, moving to practical contact and experience formation, and ending with satisfaction responses after purchase. Hartline, Maxham, and Mckee (2000) also defined service design as a process created by a business designer that enables resource inputs – employees, materials, equipment, capital, public message and technology – to become the service output/product.

A business that offers excellent service designs must offer dependable service attributes – “Anytime, Anywhere, Anyone” – to build a good corporate identity and image. Ermer and Kniper (1998) considered that a good service design is one that can satisfy customers or service receivers to buy or indulge happily in a service environment. Whereas, service attributes are the carrier of service designs and service designs are function added and the value added for the service attributes. The integrated service model combines characteristics of both service attributes and service designs and thus it becomes the complex service type. In the service process, how to effectively and reasonably divide the service process has become the most pressing problem to be solved in the service design.

In a service design, the design team needs to create or improve service by incorporating the service attributes recognized in the integrated QFD planning process into the service design (Shen, Tan, & Xie, 2000; Tan & Pawitra, 2001). However, it is not possible to consider all the service attributes during service design because of constraints on time, budget or feasible facilities and so on (Goldstein et al., 2002). A service design team needs to be able to make trade-offs while selecting the service attributes based on their relative importance ranking to achieve greater customer satisfaction (Ryan, 1995). That is to say, the service design priorities are the key results of the integrated QFD, since they guide the service design team in decision-making, resource allocation, and the subsequent QFD analysis. Therefore, deriving the final importance rankings of service design from input service attribute variables is a crucial step towards successful integration QFD.

From the review of literature offered above, it is clear that service design processes have systematical properties, and the service attributes are the critical core factors. Thus, only when the service designers clearly comprehend the details of each service attribute, can the effectiveness of the service quality control be achieved. To construct a complete service process system, Marentakis and Emiris (2010) assumed that the analysis of service attributes should stress not only customers' feelings during the service but also any other possible attributes before and after the service. Additionally, to benefit the overall service design creation, the foundation of analytical thinking for the service attributes must consider the people, the events, things, the time, and the environment in addition to the development of networking and digitalizing trends. For this issue, this study puts forward the integrated service model by integrating the Kano's model into the FQFD to categorize the service characteristics. The result will reflect, then, the interaction of service attributes and service design in order to increase customer satisfaction. A relevant description on Kano's model and FQFD applications are as follows.

### 2.2. Kano's model and its applications

In the study of quality development, Kano, Seraku, Takahashi, and Tsuji (1984) proposed the “two-dimensional” quality model to classify customer attitudes into five service quality categories: Attractive, One-dimensional, Must-be, Indifferent, and Reverse

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