Determinants of a restaurant average meal price: An application of the hedonic pricing model

Eun Soon Yim [a,1], Suna Lee [b,*], Woo Gon Kim [c,2]

[a] College of Hospitality and Tourism Management, Sejong University, 98 Kunja-Dong, Kwangjin-Gu, Seoul 143-747, Republic of Korea
[b] Dedman School of Hospitality, The College of Business, Florida State University, 288 Champions Way, UCB 2100, Tallahassee, FL 32306-2541, United States
[c] Dedman School of Hospitality, The College of Business, Florida State University, 288 Champions Way, UCB 4116, Tallahassee, FL 32306-2541, United States

ARTICLE INFO

ABSTRACT

This study applies the hedonic pricing model to examine important attributes influencing average customer meal prices in restaurants in Seoul, Korea. Data from 185 restaurants were collected via Internet, phone interviews, site inspections, and ZAGAT Survey, and analyzed using OLS regression. The log-linear model was found to be most suitable for the data, and the proposed hedonic model accounted for as much as 73.7% of the variation in meal prices. The results indicate that food quality and décor were important determinants of restaurants' average meal prices while service was not. Furthermore, the study found that a restaurant's location within the building (1st floor), the types of cuisine served (Japanese and Italian), parking facilities, private dining settings, franchising, and the number of blogger reviews (e-WOM) have significant effects on restaurants' average meal prices. The model will provide useful information for restaurateurs in deciding effective menu pricing strategies.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Effective pricing is a powerful tool to gain customer attention and increase sales when it is done correctly (Shoemaker et al., 2005). From the customers' perspective, the price of a product and/or service is a proxy for quality; therefore, management must determine pricing strategies very carefully (Raab et al., 2009; Zeithaml et al., 2006). Setting the right prices for hospitality products is a critical management decision since it leads to an organization's profitability and long-term success. According to the NPD Group (2013), there were approximately 616,008 restaurants in the US as of Fall 2012. This number is a 7% increase from Fall 2011. For the last three decades, the US restaurant industry has grown by an average rate of 2–4% every year (www.restaurant.org; Parsa et al., 2010). Unfortunately, research has also found that of those restaurants, approximately 30% fail to survive during the first year of operation. The reasons for failure include a bad economy, ineffective or insufficient marketing, and bad managerial or operational decisions including pricing decisions (Parsa et al., 2005, 2010).

When evaluating restaurants' operations, managers commonly use average guest checks as one of the most important measures of efficiency of operations (Susskind and Chan, 2000). Since menu pricing directly affects guest check averages, it is crucial for management to examine effective pricing strategies. Understanding customer perceptions and salient features affecting guests' average spending is also an important task for restaurant operators. Due to the fact that restaurant products consist of a variety of characteristics, including food, services, décor, accessibility, etc. (Fogarty, 2012; Susskind and Chan, 2000), it is difficult for restaurant management to develop optimal menu pricing. To resolve this issue, managers can adopt the hedonic pricing model to have a better understanding of pricing elements.

The hedonic pricing model has been applied to industries such as automobiles, real estate, and hotels. Since it explains a combination of characteristics of different products/services, the hedonic pricing model can be used to explain the pricing structure of restaurant products. Hedonic pricing makes it easy to distinguish which characteristics are valued more or less and to what extent. A number of hospitality studies have employed the hedonic pricing model, and their goals have focused on understanding important attributes affecting hotel room rates (Andersson, 2010; Espinet et al., 2003; Rigall-I-Torrent and Fluvià, 2011; Zhang et al., 2011), ski lift ticket prices (Falk, 2008), or other tourism-related product pricing (Clewer et al., 1992; Sinclair et al., 1990). However, the use of hedonic pricing in restaurant products has been very limited.

* Corresponding author. Tel.: +1 850 645 9311; fax: +1 850 644 5565.
  E-mail addresses: esyim@sejong.ac.kr (E.S. Yim), suna2@yahoo.com,
slee13@fsu.edu (S. Lee), wkim@cob.fsu.edu (W.G. Kim).
  [1] Tel.: +82 2 3408 3173; fax: +82 2 3408 3173.
  [2] Tel.: +1 850 644 8242; fax: +1 850 644 5565.

Despite the significance of pricing decisions in restaurants' success, pricing has received inadequate attention in the area of restaurant studies (Raab et al., 2009; Shoemaker et al., 2005), and the application of hedonic pricing in determining menu prices has been discussed in only a few studies. In applying the hedonic pricing model, the objective of this study is to explore important restaurant attributes, including tangible, intangible, and location-specific variables that affect a restaurant's average meal price. Previous research has identified influencing variables, such as service, food quality, décor, location, and parking; however, the determinants of hedonic pricing models in the previous literature were not comprehensive enough to cover restaurant industry-specific characteristics. In order to fill the gap in the previous restaurant pricing studies, this study develops a holistic hedonic pricing model, including key restaurant characteristics (e.g., cuisine type, parking), restaurant location measured by the specific floor of a multiple-story building, and electronic word-of-mouth (e.g., the number of blogger reviews) regarding the restaurants. By analyzing the attributes and factors that matter to customers, this study will provide useful information to restaurant management about menu pricing strategies.

The significant theoretical contribution of this hedonic model arises from adding electronic-WOM (e-WOM) and specific locational characteristics as determinants of pricing strategies. Regardless of the fact that e-WOM (i.e., online reviews) has become more influential than traditional WOM in patronage intention of restaurant guests, little research has included online reviews as an important determinant of pricing. Rather than traditional measures of location, such as downtown, suburban, this study identifies more restaurant-specific determinants of meal pricing, such as which floor a restaurant is located on inside a multiple-story building. This specific measure of locational characteristics is relevant when restaurants are located in metropolitan areas such as New York City, Tokyo, Hong Kong, and Seoul. In addition, seemingly important determinants, such as parking facilities and availability of private rooms, are included in the hedonic pricing model.

2. Literature review

2.1. The hedonic pricing model

The hedonic pricing model treats goods and services as a group of different characteristics (Rosen, 1974; Triplett, 1969). For example, when a customer makes a hotel reservation, attributes that he/she looks for include not only the price of the hotel, but the location of the hotel, the size of the hotel, and the amenities available to guests. The price a customer pays for a room includes a number of characteristics and benefits. Court (1939) first studied the pricing structure of products consisting of an array of characteristics and called it "hedonic pricing". These composites of characteristics of goods and services are not traded individually, but as bundles only (Lee, 2008).

Rosen (1974) introduced the hedonic pricing model, and it has been adopted by researchers in various industries. The model assumes that consumers value various attributes in different ways and that the prices consumers pay for products are a function of their immanent utility-bearing characteristics (Rosen, 1974; Thrane, 2005, 2007). Therefore, hedonic pricing is established in the form of a function. The general specification for a hedonic price equation is given as:

$$P = f(Xi) \qquad (1)$$

where P is a price and Xi are various attributes of a product/service. The model includes linear, log-linear, double log-linear, and semi-log forms, and all these forms of hedonic price models are regarded as ordinary least square regression models.

2.2. Applications of hedonic pricing in the hospitality industry

A number of studies have employed the hedonic pricing model in various industries, including automobiles (Court, 1939; Griliches, 1961), real estate (Sheppard, 1999), and art (Chanel et al., 1996). In hospitality research, the hedonic pricing model has been applied in hotels (Bull, 1994; Israeli, 2002; Monty and Skidmore, 2003; Schamel, 2012; White and Mulligan, 2002; Wu, 1999; Zhang et al., 2011), tourism (Sinclair et al., 1990), ski resorts (Falk, 2008), restaurants (Falvey et al., 1992; Gergaud et al., 2007; Gunawardana and Havrila, 1996), and the wine industry (Cardebat and Figuet, 2009; Kwong et al., 2011). Table 1 summarizes industry application, authors, sample collection, hedonic model functional form, and dependent and independent variables in recent hospitality studies that apply the hedonic pricing model.

Due to the heterogeneity of hotel products and services, the hedonic pricing model has frequently been adopted in hotel research. Every hotel has a different location and offers different services and amenities; therefore, there are many factors to be considered when determining the right pricing. Bull (1994) examined the impacts of different hotel characteristics on room rates in Ballina, Australia, and the study found that room price decreases as the star rating of the hotel decreases or the hotel's distance from the town center increases. Espinet et al.'s (2003) study tested the effects of hotel attributes on room prices in the Costa Brava area of Spain, and the study demonstrated that hotel size, star rating, town, distance from the beach, and parking spaces are the main factors of hotel pricing in that region. More recently, Abrate et al. (2011) investigated hotel room prices in Turin, Italy, and suggested that hotel characteristics such as the number of amenities, number of services, hotel size, star-rating, brand affiliation, and location have significant effects on room rates. Thus, prior studies suggest that hotel characteristics such as location-specific attributes (e.g., distance from the beach, presence of local attractions, resort location), physical attributes (e.g., number of rooms, number of services, swimming pool, free parking), and reputation (e.g., star-rating) be considered as factors of hotel room pricing.

In contrast to the area of hotel research, only a few studies in restaurant research have employed the hedonic pricing approach in determining menu pricing (Falvey et al., 1992; Fogarty, 2012; Gunawardana and Havrila, 1996). Insufficient attention has been given to restaurant menu price determinants, but hedonic pricing can aid managers in practicing optimal pricing strategies. Therefore, this study explores restaurant attributes that may influence menu pricing in particular geographic locations, specifically downtown locations.

2.3. Restaurant menu pricing

Price must be determined cautiously since it serves as a proxy for the quality of a product or service for customers (Zeithaml et al., 2006). Among the success factors for restaurants, menu design and pricing have been studied and discussed by many industry experts and scholars as essential to a restaurant's performance. Previous studies have examined ways to design effective menus and to maximize the profitability of menu items (Annaraud, 2007; Yang and Chang, 2011). Menu analysis has become an important tool for restaurant managers because effective menu pricing can lead to customer satisfaction as well as financial success (Annaraud, 2007; Atkinson and Jones, 1994).

One of the important measures used to evaluate a restaurant's performance is the average guest check, which is directly related to menu pricing. Susskind and Chan (2000) studied restaurant