Exploring a New Attribute in Determining Food Quality: Safe Cookware

Sanghyeop Lee, MS
Hospitality Administration
Nutrition, Hospitality, and Retailing Department
Texas Tech University
Lubbock, TX 79407
sanghyeop.lee@ttu.edu
Phone: (806) 300-4244

Kyungmi Seo Ph.D.
Dedman School of Hospitality
The College of Business
Florida State University
288 Champions Way, UCB 2200
P.O. Box 3062541
Tallahassee, FL 32306
kmseo@fsu.edu
Phone: (850) 645-9309
Fax: (850) 645-9310

Howook "Sean" Chang, DBA
Dedman School of Hospitality
The College of Business
Florida State University
288 Champions Way, UCB 2202
P.O. Box 3062541
Tallahassee, FL 32306
schang2@fsu.edu
Phone: (850) 645-9311
Fax: (850) 645-9310

Review for Track 2 (Poster Session)

Submitted to the 16th Annual Graduate Student Research Conference in Hospitality and Tourism

September 15, 2010

Introduction

Americans spend almost 50% of their food dollars on restaurant meals, and approximately 44% of adults eat at a restaurant each day (NRA, 2009). As the trend of eating out continues to increase due to challenges associated with work and social life, customers expect to receive safe food served in a clean and sanitary environment (Binkley, Nanivadekar, Thompson, & Brashears, 2010). Therefore, the successful restaurant needs to meet and exceed the customer's expectations. In particular, HACCP and Servsafe certifications have been a critical in providing customers with safe food. In the academic domain, food safety has been a vital research subject in the food science and hospitality journals, which mostly highlight food-borne disease outbreaks that result from biological food hazards (Arnout & Lynn, 2008; Redmond & Griffith, 2003; Worsfold, 2006). Another prevailing trend reflecting food safety in the food retail and restaurant industry is the consumption of organic food. Consumer's concerns over the quality and safety of conventional food have driven the increasing demand for organically grown food, which is perceived as healthier and safer. It is believed that organic food contains fewer agrochemical residues, such as endogenous plant toxins, biological pesticides, and pathogenic microorganisms, as well as fewer environmental contaminants (e.g., cadmium and other heavy metals) compared to conventionally grown alternatives (Magkos, Arvaniti, & Zampelas, 2006). With respect to other food hazards, a certain substance from a particular cookware can seep into the food. For example, cooking with utensils like aluminum skillets, roasting pans, and saucepans can expose customers to the ingestion of a potent neurotoxin that leached from the aluminum cookware into the food (Flaten, 1996; Karbouj, Desloges, & Nortier, 2009). Recently the Environmental Protection Agency (EPA) raised red flags about one of the chemical constituents of nonstick coatings, perfluoroctanoic acid (PFOA), claiming that research in laboratory suggests that it may be carcinogenic (Weise, 2006). The agency believed that scratching or overheating the material may leach toxins into food or release fumes into the air. Thus, the EPA called on cookware manufacturers to phase out PFOA in January 2006. Spurred by the voluntary ban on PFOA, DuPont, which supplies the nonstick coating used by cookware manufacturers, is committed to removing 95 percent of the PFOA in Teflon by 2010. The company is striving toward a complete phase-out by 2015. Hence, these headlines in the media increased consumer awareness of health risk associated with using Teflon cookware. However, this issue has never been a primary concern for restaurant operators or customers alike although customers have become increasingly concerned about risks related to food.

Unlike restaurant customers, U.S. households' concern over risks related to food might have reflected on recent sales volume of safer and healthier cookware, such as anodized aluminum or stainless steel cookware. Even celebrity chefs entered into the market by endorsing safer and healthier cookware sets for the household kitchen market. For example, Emeril Lagasse, Rachael Ray, and Paula Deen have apparently helped consumer awareness of safe cookware and increase the sales volume. With an increasing number of consumers choosing safer cookware for a healthy meal at home, fewer restaurants are meeting customer's needs concerning safe cookware at our present state of knowledge. It is hard to find a restaurant providing the customer with information about what type of cookware they use for a specific food.

Therefore, the purpose of this research is to investigate whether using safe cookware and educating the customer about it would improve customer's perceived quality of food and overall value and to examine whether they can play a role as an attribute in selecting a restaurant. This study also aims at indentifying which socio-demographics is likely to weigh more on safe cookware in selecting a restaurant.

Literature Review

Food Safety

Over the past two decades, food safety has become increasingly important in consumer purchase decision making (Knight & Warland, 2004; Knight, Worosz, & Todd, 2009). Food safety is a system to minimize the occurrence of food hazards. According to the HACCP, food hazards are primarily associated with the biological, physical, and chemical aspects. Among those hazards, the biological hazard has been extensively examined in the academic literature. The source of biological hazard has been identified; inadequate heat treatment, inappropriate storage of foods, infected food handlers and cross-contamination (Redmond & Griffith, 2003). Food and Drug Administration (2004) also documented food hazards that resulted from food from unsafe sources, inadequate cooking, improper holding temperatures, contaminated equipment, and poor personal hygiene as the persistent food safety risk factors.

Food quality

The food quality attribute has been known as an important criterion in selecting a restaurant (Dube, Renaghan, & Miller, 1994). It is also a core reason that customers revisit to restaurants (Kivela, Robert, & John, 1999; Knutson & Patton, 1993; Shank & Nahhas, 1994). Sulek and Hensley (2004) identified food quality, physical setting, and good service as important attributes in a full-service restaurant and found food quality was the most important influencing customer satisfaction. Nield et al. (2000) indicated food quality was an important contributor to tourist satisfaction. Josiam and Monteiro(2004) suggested a taste of food, aroma, personal preference, appearance of the food, spicy food, price, and cultural familiarity as an food quality factor. Liu & Jang (2009) identified specific attributes to determine food quality; taste, food presentation, menu variety, healthy food option, food freshness, appropriate food temperature, and food safety. Among the attributes, they argued that food safety was an important cue for evaluating food quality. However, their definition of food safety was limited to undercooked food, food with an off taste, or foreign material in their food.

Methodology

A conjoint analysis is a popular method for identifying and understanding the combined effects of product attributes on preferences for a product/service (Hobbs, 1996). The conjoint analysis is a great tool to better predict the overall consumer preference through aggregating the utility scores of all individual products' attributes (Levy, 1995). Restaurant customers consider food quality attributes as a whole when they select a restaurant to dine in instead of considering each attribute independently (Koo, Fredrick, & John, 1999). Therefore, the current research applies conjoint analysis to measure the utility of a safe cookware among other attributes that determine the food quality such as menu variety, taste, menu presentation, freshness, and nutritional value.

The results of conjoint analysis will exhibit a customer segment attaches to a safe cookware attribute. Findings of the research will provide effective business strategies best suited to serve the specific market segment.

Table 1

Food quality attributes	Levels 0	1	Prior studies
Menu variety Taste Menu presentation Freshness Nutritional value	Normal	Higher	Liu and Jang(2009), Namkung & Jang (2007) Josiam & Monteiro(2003) Soriano (2002) Kivela et al. (1999) Schroeder (1985)
Usage of safe cookware	Normal	Higher	New attribute

References

Arnout, R. H. F., & Lynn, J. F. (2008). Food-Safety Practices in the Domestic Kitchen: Demographic, Personality, and Experiential Determinants. *Journal of Applied Social Psychology, 38*(11), 2859-2884.

Binkley, M., Nanivadekar, S., Thompson, L., & Brashears, M. (2010). *Microbial Testing of the Consumer Environment in Foodservice Establishments: A Pilot Study.* Paper presented at the International Association for Food Protection, Anaheim, CA.

Dube, L., Renaghan, L., & Miller, J. (1994). Measuring Customer Satisfaction for Strategic Management. *Cornell Hotel and Restaurant Administration Quarterly, 35*(1), 39-47.

Flaten, T. P. (1996). Status and future concerns of clinical and environmental Aluminium toxicology. *Journal of Toxicology and Environmental Health, 48*(6), 527-541.

Food and Drug Administration (FDA). (2004). *Report on the Occurrence of Foodborne Illness Risk Factors in Selected Institutional Foodservice, Restaurant, and Retail Food Store Facility Types*. Washington D.C.: US Public Health Service.

Hobbs, J. E. (1996). A transaction cost analysis of quality, traceability and animal welfare issues in UK beef retailing. *British Food Journal, 98*(6), 16-26.

Josiam, B. M., & Monteiro, P. A. (2004). Tandoori tastes: perceptions of Indian restaurants in America. *International Journal of Contemporary Hospitality Management, 16*(1), 18-26.

Karbouj, R., Desloges, I., & Nortier, P. (2009). A simple pre-treatment of Aluminium cookware to minimize Aluminium transfer to food. *Food and Chemical Toxicology, 47*(3), 571-577.

Kivela, Robert, I., & John, R. (1999). Consumer research in the restaurant environment, Part 1: A conceptual model of dining satisfaction and return patronage. *International Journal of Contemporary Hospitality Management, 11*(5), 205-222.

Knight, A., & Warland, R. (2004). The Relationship Between Socio-demographics and Concern About Food Safety Issues. *Journal of Consumer Affairs, 38*(1), 107-120.

Knight, A., Worosz, R., & Todd, E. (2009). Dining for Safety: Consumer Perceptions of Food Safety and Eating Out. *Journal of Hospitality & Tourism Research, 33*(4), 471-486.

Knutson, B. J., & Patton, M. E. (1993). Restaurants Can Find Gold Among Silver Hair (Vol. 1, pp. 79 - 90): Routledge.

Koo, L. C., Fredrick, K. C. T., & John, H. C. Y. (1999). Preferential segmentation of restaurant attributes through conjoint analysis. *International Journal of Contemporary Hospitality Management, 11*(5), 242-253.

Levy. (1995). Modern marketing research techniques and the property professional. *Property Management, 13*(3), 33-40.

Liu, Y., & Jang, S. (2009). Perceptions of Chinese restaurants in the U.S.: What affects customer satisfaction and behavioral intentions? *International Journal of Hospitality Management, 28*(3), 338-348.

Magkos, F., Arvaniti, F., & Zampelas, A. (2006). Organic Food: Buying More Safety or Just Peace of Mind? A Critical Review of the Literature. *Critical Reviews in Food Science and Nutrition, 46*(1), 23 - 56.

Namkung, Y., & Jang, S. (2007). Does Food Quality Really Matter in Restaurants? Its Impact On Customer Satisfaction and Behavioral Intentions (Vol. 31, pp. 387-409).

Nield, K., Kozak, M., & LeGrys, G. (2000). The role of food service in tourist satisfaction. *International Journal of Hospitality Management, 19*(4), 375-384.

NRA. (2009). Industry at a glance. Retrieved 09/08, 2010, from http://www.restaurant.org/research/facts/

Redmond, E. C., & Griffith, C. J. (2003). Consumer food handling in the home: a review of food safety studies. *Journal of Food Protection, 66*(1), 130-161.

Schroeder, J. J. (1985). Restaurant Critics Respond (Vol. 25, pp. 56-63).

Shank, M. D., & Nahhas, F. (1994). Understanding the Service Requirements of the Mature Market (Vol. 1, pp. 23 - 43): Routledge.

Soriano. (2002). Customers' expectations factors in restaurants: The situation in Spain. *International Journal of Quality & Reliability Management, 19*(8), 1055-1067.

Sulek, J. M., & Hensley, R. L. (2004). The Relative Importance of Food, Atmosphere, and Fairness of Wait (Vol. 45, pp. 235-247).

Weise, E. (2006, January 25, 2006). EPA tries to curb use of Teflon chemical. *USA Today*.

Worsfold, D. (2006). Consumer information on hygiene inspections of food premises. *Journal of Foodservice, 17*(1), 23-31.