Hotel restaurant brand attributes: Exploratory Factor Analysis

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Abstract
No doubt attracting and retaining customers in any restaurant operation including the hotel restaurant is essential for it performance and operational survival. That is the reason why creating a strong brand is one of strategies used by many restaurant operations in achieving the purpose. Nevertheless, despite the increasing interest in the concept of brand loyalty, brand awareness, brand image, brand competitiveness in the restaurant setting and its operational aspects, there has been still very little research looking at the association of the brands with the hotel restaurant setting in particular. With that, this paper reviewing the hotel restaurant brand attributes dealing with food quality, service quality and physical environment. The items in each construct is empirically tested and run through the exploratory factor analysis to see the underlying relationships and the grouping of them is consistent with the way the questionnaire is developed and subsequently used the construct as predictor for customer dining experience, satisfaction and post purchase behavior.

Keywords:
Brand, loyalty, awareness, image, competitiveness, hotel restaurant, Exploratory Factor Analysis
1 Introduction

In the past, the inclination of customers to dine at any the restaurant well depends on the functional value of food and services that operators provided. Taste, variety of food, freshly prepared food and quick service are the attributes that clearly affected the customers’ inclination toward patronization. In consensus, if the restaurateur’s able to provide and maintain those elements they would stay longer and be more resilience in the operation (Ibrahim et al., 2011). However, with the waves of modernization and as customer has hastily adapted with the changing of the life styles, inadequate time to prepare home cook food, the growth interest in cuisine, media exposure (celebrity chef, food innovation) and the increasing growth of restaurants in many business areas (shopping center, high streets), higher educational level and with the increase of disposal income (Madichie, 2007), they are no longer focus on the functional value alone when making decision of choosing the restaurant and their purchasing decision about the products/services (Malik et al., 2011). In line with these contributory factors and the changing pace, many consumers including the restaurant ones besides other attributes are also now interested and turn into a brand when dining at the restaurant (Baek, Kim et al., 2010). In other words, restaurant brand is becoming one of the criterion in selecting the restaurant and the increased of such customers or popularly known brand seekers are obvious in this present days (Watson, Clark et al. 1988; Vigneron & Johnson, 1999).

The above statement is evident when building a brand apart from others is a primary focus among the restaurateur’s and the restaurant managers (Muller & Woods, 1998). Restaurant managers are seen of applying the brand management theories and practices, and many restaurateurs are reshaping their corporate missions to reflect branding orientation rather than product orientation. Muller and Woods (1998) further contends that as restaurant industry displays characteristics of the decline stage on the product life cycle thus the need to adopt the skills of the brand by manager as one of their core competencies to remain the business and continuously be competitive in the marketplace. Adopting a branding orientation in line with proposition that a brand is in the memory of the consumer and is the future of the product is obviously apparent (Kapferer, 1997). In this sense, if a brand is in the memory of the consumer and is the future of the product, then developing and maintaining high quality brands with positive associations should be of utmost importance to restaurateurs and restaurant managers (Aaker, 1996). In line with this, recent scholar in addition to food and services proposed that physical environment and restaurant image are the components of the restaurant brand attributes.

With that, the objective of this paper besides reviewing the hotel restaurant brand attributes dealing with food quality, service quality and physical environment empirically tested and run the items in each construct through an exploratory factor analysis.
2 Literature Review

2.1 Food Quality and Brand

As unanimously agree by many scholars that food and services is a pillar of any restaurant operation, thus the failure of maintaining these two core elements will put restaurant out of business or otherwise. Sulek and Hensley (2004) noted that the important of food in the restaurant operation is normally looking from the food quality perspective and it attributes while service is normally dealing with service delivery system. In fact, these two core elements and it attributes contribute in building the restaurant image where the image is also manifestation of the branding of the restaurant (Diamantopoulos, Smith et. al., 2005; Bill Xu & Chan, 2010).

Due to its importance, the role of food quality and customer satisfaction in relation to image and brand of the restaurant should not be ignored. Nield, Kozak, and LeGry (2000) investigated the role and importance of food quality to tourists’ overall satisfaction. Taking a sample of 341 tourists visiting the Black Sea resorts in Romania, they found that most tourists obtained a high degree of satisfaction through food quality attributes (variety of dishes, taste, presentation of food and others). It is interesting to note that although the focus of this study is more toward relationship between food quality and tourist satisfaction but they revealed that the food quality also acts as catalyster for branding the restaurant among the international tourists.

Another important aspect that needs to be highlighted is that food quality besides attracting the potential customers and increases the brand image of the restaurant it contributes to customer repeat-patronization (Kivela, 2000). In line with this, varieties of food as part of food quality is strongly creating the image and branding of the restaurant and subsequently encourage the repeat-patronage decisions. Despites using numbers of attributes like quality of service, cost/value of entire meal and place/ambience, food quality stood up and becoming the most acceptable determinant in developing branding of the restaurant and cause customers’-patronization. This notion is supported that customers’ dining experiences and restaurant image were tarnished due to the failure of the restaurant operators in providing consistent quality of food (MacLaurin, 2000; Edwards & Meiselman, 2005).

2.2 Service Delivery and Brand

Parasuraman et al. (1985) are among the most prominent researchers on the service quality noted that the widely used definition of service quality is to meet customers’ expectation. They argued that service quality could neither be conceptualized nor evaluated by the traditional methods as services possess three characteristics: intangibility, heterogeneity and inseparability. They conceptualized service quality as a form of attitude, which results from a comparison of customers’ expectations with perceptions of performance thus developed an instrument called SERVQUAL to measure service quality. In general, SERVQUAL is representing by five dimensions: reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman, Zeithaml et al., 1988;
Lewis & Chambers, 1989; Warde & Martens, 2000; Zeithaml & Bitner, 2003; Matilla, 2001; John & Pine, 2002; Andersson & Mossberg, 2004; Gustaffsson et al., 2006) beside focusing on the customer expectation and perception, they on the other hand stressed that the service quality as one of the attributes of restaurant brand. Looking from the overall five attributes of SERVQUAL as a uni-dimension, they further posited that restaurant brand is formed from the service quality render by the restaurateurs. Taking one example, Hansen et al. (2005) discovered that service quality is an essential part of the brand experience of eating at the restaurants. He also highlighted that, bad brand experience on the service quality led to unreturned customers.

Restaurant brand experience also affects customer satisfaction and determines their future behaviors (Kivela, 2000; Sulek, 2004; Namkung & Jang, 2007). This notion is further strengthened that perceived service quality is considered as the antecedents of restaurant brand satisfaction and emotional responses as the moderating variable (Ladhari et al., 2008). In examining the effect of experiential value on customer satisfaction with service encounters in the luxury–hotel restaurant, Wu and Liang (2009) found that together with restaurants environmental factors, service delivery and brand name positively influence the consumer experiential value. The important of service quality for building a restaurant brand has created the impact of it beyond the traditional approach. In searching the impact and consequences of restaurant customer satisfaction with the restaurants brand experience (food quality, service quality, atmosphere, and price fairness, Jeong and Jang (2011) disclosed customer satisfaction on those brand experience not only triggering the positive conventional word of mouth but electronic word of mouth motivation (eWOM).

2.3 Physical Environment

In restaurant operation perspective, besides food and the service must be of an acceptable quality, pleasing physical surroundings like decor, artifacts, layout, and music to a large extent determined the degree of the overall customer dining behavior (Ryu, 2010). Kotler (1973) initially indicated that in some restaurant situations, the atmosphere of the place can be as much important as the product itself (e.g., foods and services) in customers purchasing decision making. Bitner (1992) used the term SERVICESCAPE which describing “the built environment” or more specific, the man-made physical surroundings as opposed to the natural or social environment. The physical surrounding refers to the man-made physical setting/conditions, which can be controlled by restaurateurs as opposed to the natural environment. In this context, she espoused that physical surroundings included all of the physical factors such as decor, artifacts, layout, furniture’s can be controlled by the restaurant operators to enhance customer internal responses like cognition, emotion, and satisfaction) and the external responses like staying, re-patronization and dissemination of their experiences.

From the operational perspectives, customer’s view of the physical environment can be the important cue to evaluate their overall experience in an operation. The physical environment in the restaurant setting not only used to attract but to fulfill
customers’ specific needs and wants, thus effective spatial layout which relate to arrangement of objects, such as furniture and equipment’s cannot be taken lightly by the operators (Nguyen & Leblanc, 2002). Efficiency of layout in service settings facilitates the fulfillment on the functional needs and affects the comfort of the customer (Wakefield & Blodgett, 1994).

Besides looking at the physical environment in enhancing customer internal responses (cognition, emotion, and satisfaction) and the external responses (staying, re-patronization and dissemination of their experiences), researchers have identified the essential of the physical environment in uplifting the restaurant branding (Wakefield & Blodgett, 1994; Nguyen & Leblanc, 2002; Raajpoot, 2002). They argue that customers may respond to more than just the quality of the food and service when evaluating their experience thus the physical surroundings consciously or unconsciously influencing customers before, during, and after dining out in a restaurant. In this context, an inspired restaurant physical environment and layout is one of the factor in enhancing restaurant marketing objectives such as positive perceived of quality, positive brand experience, and positive brand outlooks (Ryu & Jang, 2008; Ryu, Lee et al., 2012). Ryu and Jang (2008) posit that perceived physical environment as a direct indicator of through branding toward a customer’s satisfaction in the restaurant, hence he argued that physical restaurant environment not only for customer satisfaction but increased the restaurant branding. Thus, restaurateurs are advice to not belittle the potentiality of the physical environment besides other attributes in managing restaurant branding.

### 3 Methodology

It is worth mentioning that the purpose of the literature search not only limit in finding the study gaps, enlightening the relationship between variables, but establishing the conceptual study framework, developing constructs and items for the research instrumentation. Hair (2006) argue that if the literature has provided or established sufficient discussion on the constructs or dimensions it can be used to operationalize it by directly adopting the items. However, if there are a slight different on the objective of the study the items for each constructs and dimensions need to be adapted and some might be newly developed by the researcher.

With that, the questionnaire survey items for hotel restaurant brand attributes consisting 8 items for food quality, 7 items for service quality and 10 items for physical environment and they were mostly adapted from the various sources of the previous researchers with minor modification made in term of wording and contents to suit the research objectives (Kivela et. al., 2000; Raajpoot, 2002; Sulek & Hensley, 2004; Namkung & Jang, 2007; Meng & Elliot, 2008; Wall & Berry, 2007; Han & Ryu, 2009; Aaker, 1997; Keller, 1993; Siguaw et al., 1999; Temporal, 2001).

As this study is looking at the hotel restaurant brand attributes, the selected five-star hotel restaurants are data collection contextual setting and their walk-in customers are the sample. With that, the restaurant managers of the selected five-star hotel
restaurant are contacted seeking permission to undertake the survey and request administrative support. With the assistance of waiter and waitresses and the absence of any obvious problem with either the instrument or the process, a total 482 questionnaires were successfully collected.

4 Analysis and result

4.1 Exploratory Factor Analysis (EFA)

Undoubtedly, an Exploratory Factor Analysis (EFA) was essential to identify the underlying relationships and whether the grouping for each item was consistent with the way the questionnaire was developed or used. Factor analysis is able to establish whether a common factor or more than one factor is present in the responses to the items. The factor analysis test was used to understand the underlying structure in the data matrix, to identify the most parsimonious set of variables, and to establish the goodness of measures for testing the variables (Hair, 1998). In other words, this technique was used to assess whether the items in the three functional areas identified earlier did group into logically consistent factors.

An exploratory principal component factor analysis with varimax rotation was employed to identify the underlying structure of items in hotel restaurant attributes that are food quality, service quality and physical environment. Two statistical criteria as suggested by Hair (2006) were used to determine the number of factors to be extracted: (1) the absolute magnitude of the eigenvalues of factors (eigenvalue greater than one criterion), and (2) the relative magnitude of the eigenvalues (scree test plot). The eigenvalue of a factor represents the amount of total variance accounted by the factor. In this study, the total amount of variance explained by the factor(s) is set at 50.0 % and above. In addition, the screen test plot was also inspected to find a point at which the shape of the curve changed direction and became horizontal. All factors above the elbow, or a break in the plot were retained as these factors contributed the most to the variance in the data set. In interpreting the factors, only a loading of .50 or greater on one factor were considered. Communality values above .50 were observed in a case when only one factor emerged from the factor analysis (Hair, 1998, 2006). The ultimate objective is to minimize the number of significant loadings and to make sure that each variable is associated with only one factor. Factors that have been cleaned were then interpreted or named by examining the largest values linking the factors to the items in the rotated factor matrix.

4.2 EFA on food quality

Analysis was undertaken on eight items used to measure food quality as part of hotel restaurant brand attributes. Using the principal components analysis only one component was extracted or produced unidimensional. In other words, the analysis resulted in a single factor solution with eigenvalue of 3.724, explaining 46.551 % of variance in the data and factor loadings for the five items ranged from 0.829 to
Table 1 summarized the results and as can be seen, the KMO measure of sampling adequacy value for the items was .758; indicating that the items were interrelated and creates a common factor. Bartlett’s Test of Sphericity was found to be significant (Approx. Chi-Square = 2306.347, p < .001) indicating the significance of the correlation matrix and thus the factor analysis undertaken was appropriate. Three items were deleted (B1FQ1, B1FQ2 and B1FQ8) due to the lower factor loadings (<.50).

Table 1: Results of EFA on food quality

<table>
<thead>
<tr>
<th>Code</th>
<th>Items</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1FQ4</td>
<td>I belief that the five-star hotel restaurant mostly offers the healthy food</td>
<td>.876</td>
</tr>
<tr>
<td>B1FQ7</td>
<td>This five-star hotel restaurant is taking care of all aspects including temperature, portion size before food is being served</td>
<td>.870</td>
</tr>
<tr>
<td>B1FQ6</td>
<td>Although expensive the food serves in this five-hotel restaurant is value for money</td>
<td>.860</td>
</tr>
<tr>
<td>B1FQ5</td>
<td>I belief tasty food is offered by most of the five-star hotel restaurants</td>
<td>.860</td>
</tr>
<tr>
<td>B1FQ3</td>
<td>Food presentation in this five-star hotel restaurant not only good but visually attractive</td>
<td>.829</td>
</tr>
</tbody>
</table>

**Eigenvalues**
- 3.724

**Percentage of Variance explained**
- 46.551

**Total Variance explained**
- 46.551

**KMO**
- .758

**Bartlett’s Test of Sphericity**
- 2306.347***

*Note. N = 482; *p < .05; **p < .01, ***p < .001.

These factors are mainly concerned with, healthy food at the five-star restaurant hotel (B1FQ4), taking care of all aspects including temperature, portion size before food is being served (B1FQ7), food serve value for money (B1FQ6), tasty food offered (B1FQ5) and food served visually attractive (B1FQ3). As a result, the name FOOD QUALITY was retained.

**4.3 EFA on service quality**

Second analysis was employed on the seven items used to measure service quality as part of hotel restaurant brand attributes. A single factor solution comprises of five item produced eigenvalue of 3.708, explaining 52.97% of variance in the data and factor loadings for the seven items ranged from .81 to .89. The KMO measure of sampling adequacy value for the item was .85; indicating that the items were interrelated and creates a common factor. Bartlett’s Test of Sphericity was also found to be significant (Approx. Chi-Square = 1684.724, p < .001) indicating the significance of the correlation matrix and thus the factor analysis undertaken was appropriate. These five items concerned with, efficient counter and excellent table service (B2SQ4), personalised service (B2SQ5), friendly service (B2SQ3), well-trained, competent and experienced staff (B2SQ6) and attentiveness of staff (B2SQ7). Two items were deleted (B2SQ1 and B2SQ2)
due to the lower factor loadings (<.50). As a result, the name SERVICE QUALITY was retained. Table 2 summarized the results of the analysis.

Table 2: Results of EFA on service quality

<table>
<thead>
<tr>
<th>Code</th>
<th>Items</th>
<th>Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2SQ4</td>
<td>Providing an efficient counter and excellent table service is the priority to this five-star hotel</td>
<td>.890</td>
</tr>
<tr>
<td>B2SQ5</td>
<td>I certainly confidence that this five-star hotel restaurant emphasized on personalised service</td>
<td>.866</td>
</tr>
<tr>
<td>B2SQ3</td>
<td>I have no doubt about friendly service giving by this five-star hotel restaurant compare to other star</td>
<td>.862</td>
</tr>
<tr>
<td>B2SQ6</td>
<td>I belief this five-star hotel restaurant staff seem to be well-trained, competent and experienced.</td>
<td>.854</td>
</tr>
<tr>
<td>B2SQ7</td>
<td>The service staffs of this five-star hotel restaurant are very attentive to their customers</td>
<td>.819</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Eigenvalues</th>
<th>Percentage of Variance explained</th>
<th>Total Variance explained</th>
<th>KMO</th>
<th>Bartlett’s Test of Sphericity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.708</td>
<td>52.976</td>
<td>52.976</td>
<td>.850</td>
<td>1684.724***</td>
</tr>
</tbody>
</table>

Note. N = 482; *p < .05; **p < .01, ***p < .001.

4.4 Factor Analysis on Physical Environment

Similar to preceding section, factor analysis was also applied on ten items used to measure the Physical Environment. Looking at Table 3, out of ten, six items are clustered together to form one factor known as PHYSICAL ENVIRONMENT factor. This factor produced eigenvalue of 4.466, explaining 44.66% of total variance in the data and factor loadings for the six items ranged from .80 to .89. Table 3 summarized the results and as can be seen, the KMO measure of sampling adequacy value for the items was .87; indicating that the items were interrelated and creates a common factor. Bartlett’s Test of Sphericity was also found to be significant (Approx. Chi-Square = 2382.173, p < .001) indicating the significance of the correlation matrix and thus for factor undertaken was appropriate. Four items were deleted (B3PE7, B3PE9, B3PE10 and B3PE8) due to the lower factor loadings (<.50).

The statement used for this factor specifically focus on, attractive dining area (B3PE2), the coziness and comfortable (B3PE4), the right décor and lighting (B3PE3), the concept and the setup (B3PE1), the cleanliness (B3PE5), and the conduciveness of the dining environment(B3PE6).
Table 3: Results of EFA on Physical Environment

<table>
<thead>
<tr>
<th>Code</th>
<th>Items</th>
<th>F1</th>
</tr>
</thead>
<tbody>
<tr>
<td>B3PE2</td>
<td>As opposed to other star rating hotel, this five-star hotel restaurant provide more visually attractive dining area</td>
<td>.896</td>
</tr>
<tr>
<td>B3PE4</td>
<td>The five-star hotel restaurant dining area is normally cosy and comfortable</td>
<td>.895</td>
</tr>
<tr>
<td>B3PE3</td>
<td>This five-star hotel restaurant has the right décor, lighting, that match its theme and image</td>
<td>.880</td>
</tr>
<tr>
<td>B3PE1</td>
<td>I believe the concept and the setup of this five-star hotel restaurant are more attractive than other star rating hotel</td>
<td>.865</td>
</tr>
<tr>
<td>B3PE5</td>
<td>I perceived that the five-star hotel restaurant never compromising on the cleanliness of it dining area</td>
<td>.819</td>
</tr>
<tr>
<td>B3PE6</td>
<td>I have no doubt on the conduciveness of the dining environment of the five-star hotel restaurant</td>
<td>.806</td>
</tr>
</tbody>
</table>

Eigenvalues

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of Variance explained</td>
<td>44.661</td>
</tr>
<tr>
<td>Total Variance explained</td>
<td>44.661</td>
</tr>
<tr>
<td>KMO</td>
<td>.875</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td>2382.173***</td>
</tr>
</tbody>
</table>

Note. *N* = 482; *p* < .05; **p** < .01, ***p*** < .001.

5 Contribution and conclusion

No doubt that management of the hotel is continuously investing resources and strategies to create brand not only for the existing customers but attracting the new one. Having a strong brand allowing the hotel management to charge the premium price over and above and create the ability to gain the market share against their rival and fostering customer loyalty which in turn reduces the marketing costs. Research revealed that branded hotel achieved higher net operating income during the economic recessions. On the customer side, the benefits of perceiving the strong brand manifestly are reducing the perceived risks, search cost and simplifying the decision-making process as strong brands normally associated with quality.

Brand in hotel operation not only be seen from their general reputable name but it is dealing with many facets including their overall services, amenities and restaurants. In line all those notion, recognizing the hotel restaurant brand attributes through it constructs (food quality, service quality and physical environment) and looking in depth the underlying relationships between each item in the constructs using exploratory factor analysis enable them to be used as predictors for customers dining experience, satisfaction and behavior intention.
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7 References


