SERVICE QUALITY AND CUSTOMER SATISFACTION IN CHINESE FAST FOOD SECTOR: A PROPOSAL FOR CFFRSERV

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ABSTRACT
This study investigates customer's perception of Chinese fast food restaurant service quality and its relationship with customer satisfaction. Employing modified DINESERV scale, the study uses both quantitative and qualitative research approaches. Qualitative data collection consisted of face-to-face interviews and group discussion. A questionnaire was developed using three sources: interview responses of the customers, the restaurant's survey and the literature. A total of 205 completed questionnaires were used in the analysis. The new measurement scale, Chinese Fast Food Restaurants Service Quality Scale (CFFRSERV), contained 28 items across six dimensions: assurance and empathy, food, cleanliness, responsiveness, reliability and tangibles. The findings from the study revealed that service quality variables have positive influence on customer satisfaction except reliability dimension. The findings provided a useful tool for service quality improvement in Chinese fast food restaurants. Validating the scale in other restaurants in various cities in China is an area for further research.

Key words: Service quality, Satisfaction, Fast food restaurant

INTRODUCTION

Organisations over the years have regarded perceived service quality as a strategic tool for positioning as well as means of achieving operational efficiency and improving business performance (Mehta, Lalwani & Han, 2000). Service quality has been seen as critical for the success of organisations because of its close link with customer satisfaction (Parasuraman et al., 1985, Gilbert and Veloutsou, 2006) especially in the service industry. Thus organisations regard quality as a source of competitive advantage which they always strive to achieve. Moreover, excellent service increases customer retention and leads to repeat customer purchase behaviour (Cronin and Taylor, 1992) which ultimately increases the market share of the companies and generates high revenues. For this reason, restaurant marketers and service researchers more often try to study and understand customers' needs and desires on service quality and satisfaction level.

The Chinese food service industry has experienced many changes over the last two decades. A wide range of multinational companies are attracted by China's potential market, for instance, the leading fast food chains such as McDonalds, KFC, and Burger King. After KFC opened its first fast food restaurant in Beijing in 1987, Chinese fast food operators followed Western advanced management techniques and developed innovatively in a rapid manner. At present, the fast food sector is one of the fastest growing sectors in China. According to Euromonitor International (2013) the fast food sector will continue to grow and by 2017 the sector will be worth nine hundred and thirty one billion Renminbi (RMB 931 billion) [US$ 150 billion], suggesting an annual growth of 7%. Apart from this, competition among domestic companies is intense because Chinese fast food account for nearly 70% market share of the industry (Research and Markets, 2011). Undoubtedly, a trend towards a

culturally mixed “global village” has been noted (Tomlinson, 2003); albeit not only in China. Western fast food is getting popular, especially with children and teenagers, however, Chinese traditional foods are still the daily meal for the majority, because traditional eating habits are hard to change.

Research interest in perceived service quality in fast food operations abound (e.g. Stevens, Knuston and Patton, 1995; Oyewole, 1997; Brady, Robertson and Cronin, 2001; and Qin and Prybutok, 2008). However, only a few comprehensive attempts (e.g. Qin, Prybutok and Zhao, 2010) have been made to measure service quality in the Chinese fast food restaurant sector. A lack of knowledge about Chinese customers’ perceptions might lead management to misallocate resources when attempting to improve customer perceived quality. Since the concept of Chinese fast food service quality is not fully explored, this study aims to develop a scale for fast food restaurants' service quality by examining two Chinese restaurants in Changsha, Hunan province. It also explores the impact of service quality on customer satisfaction.

Having introduced the research background and the objectives of this study, the rest of this paper is organized as follows. The next section provides an overview of service quality, explores the theoretical background, and summarises the literature. The next section describes the methodology, followed by presentation of the results and analysis of the findings. Conclusions and suggestions for future research are presented in the last section.

SERVICE QUALITY

The idea that perceived service quality is a multidimensional construct is widely accepted (Grönroos, 1984, 1990; Parasuraman et al., 1985). However, there is no general agreement

with regard to the content of the dimensions (Brady and Cronin, 2001). In the last three decades, a great number of service quality dimensions have been published. The number and content of dimensions are quite diverse, and ranges from two (Grönroos, 1984) to seven (John and Tyas, 1996). Table 1 shows a range of service quality dimensions that have been developed over the years. Previous studies indicate that the number of dimensions might vary based on the industry and country or cultural context. Grönroos (1984) developed the Nordic model that divided service quality into two dimensions: technical quality and functional quality. The importance of focusing on both technical and functional aspects of quality has been established in the literature. According to Chelladurai and Chang (2000), the majority of service quality evaluations were focused on three aspects: physical environment, the personal interaction and core service or product.

Table 1: Service Quality Dimensions

Service quality evaluation in the fast food industry

A number of studies (e.g. Steven et al., 1995; John and Tyas, 1996; Qin and Prybutok, 2008; Qin, Prybutok and Zhao, 2010) have been carried out in evaluating service quality in the fast food industry. Kara, Kaynak, and Kucukemiroglu (1995) investigated customer perception of fast food restaurants service quality in the United States and Canada using eleven attributes: price, friendliness of personnel, variety of menu, service speed, cleanliness, calorie content, convenience, business hours, novelties for children, service delivery and seating facilities. The DINESERV scale was publicized by Steven et al., (1995) with five dimensions similar to the SERVQUAL model. John and Tyas (1996) afterwards offered a seven dimensional model consisting of Tangibles, Tangibles 2, Reliability, Responsiveness, Empathy, Assurance and Food. Qin et al. (2010) postulated a six dimensional scale somewhat similar to John and

Tyas' (1996) model featuring Tangible, Assurance, Empathy, Responsiveness and Reliability but differed with the inclusion of Recovery dimension.

The DINESERV instrument was proposed as a reliable and comparatively easy to use tool for determining how guests evaluate restaurant service quality. The original DINESERV tool consisted of 29 items, measured on a seven-point scale. DINESERV items also fall into five service quality dimensions. In the food services context, tangibles refer to a restaurant's physical design, appearance of staff and cleanliness. Reliability involves freshness and temperature of the food, accurate billing and receiving ordered food. Responsiveness in restaurants relates to staff assistance with the menu or appropriate and prompt response to customers' needs and requests. Assurance means that restaurant customers should be able to trust the recommendations of staff, feel confident that food is free from contamination and be able to say any concern without fear. Finally, empathy refers to providing personalised attention to customers by being considerate towards customers' problems.

In the development of DINESERV, it was used to test customers' perceived service quality in three different restaurant segments i.e. fast food service, casual service and fine dining in the USA. The instrument has been widely used in evaluating service quality in the restaurant business in variety of contexts. A number of experts (e.g. Bougoure and Neu, 2010) have agreed that DINESERV is a valid and reliable tool for measuring service quality in the food service industry. However, the results of the original DINESERV study revealed dimensionality problem similar to those identified in the SERVQUAL (Parasuraman et al., 1991) research. DINESERV 29 interview items covered most of the aspects of the SERVQUAL five dimensions. It failed however to measure food quality, which is one of the most important factors when assessing overall customer experience in the restaurant.

Subsequent studies in this area (e.g. Kivela, Inbakaran, and Reece, 1999; Raajpoot, 2002; Mohsin, 2005; Namkung and Jang, 2007; Qin and Prybutok, 2009; Qin, Prybutok and Zhao, 2010) have included and found this measure significantly influential on service experience. Furthermore, Kim et al. (2003) argue that there is a need for creating three sub-dimensions under the tangibles factor; the items included questions about the appearance of physical facilities and staff, menu of the restaurant, and comfortableness and cleanness of facilities. In addition to this, the scale was designed nearly twenty years ago and was formulated in Western context. It is widely agreed that customer perceptions of quality vary from one industry to another and from country to country (Olorunniwo and Hsu, 2006; Markovic et al., 2010). Moreover, DINESERV has general items used in evaluating key dimensions; perhaps more items should be updated.

Service quality and customer satisfaction

The relationship between customer satisfaction and service quality is a controversial issue in the literature. There is a general agreement by researchers that the concepts of customer satisfaction and service quality are extremely interrelated. Although satisfaction and service quality are close in meaning; they are distinct. Perceived service quality was explained as a form of attitude and a long-run overall evaluation of a product or service, while customer satisfaction was considered as a transaction-specific evaluation (Bitner et al., 1990; Cronin and Taylor, 1992; Oliver, 1981; Parasuraman et al., 1988). A number of researchers (e.g. Cronin and Taylor, 1992; Oliver, 1997; Lee et al., 2000; Ting, 2004 and Kim et al., 2009) supported that service quality is one of the main drivers of customer satisfaction. High service quality usually leads to high level of customer satisfaction, but customer satisfaction is also influenced by several other factors such as price, personal and situational factors, and is an emotional evaluation (Cronin and Taylor, 1992); therefore, customer satisfaction is not a

significant predictor of service quality. Similarly, Spreng and MacKoy's (1996), Lee et al*'s* (2000) and Ting's (2004) studies about the relationships between service quality and satisfaction indicate empirical support to this notion.

In the food services context, results of many previous studies have revealed that service quality has a strong relationship with customer satisfaction (e.g. Stevens, Knutson and Patton, 1995; Andaleeb and Conway; 2006; Kim et al*.,* 2009; Min and Min, 2011). Andaleeb and Conway (2006) noted that customer satisfaction was significantly influenced by the reaction of the employees, price and food quality. Qin and Prybutok's (2008) investigation of service quality and customer satisfaction in fast food restaurants in China using modified SERVPERF instrument, incorporating an additional dimension (recoverability), found that the antecedents of customer satisfaction at the fast food restaurants in China were service quality, food quality and perceived value. They found that recoverability, tangibles, responsiveness and reliability were all important dimensions of service quality. Kim et al. (2009) found that five extracted restaurant dimensions - food quality, service quality, price and value, atmosphere and convenience - had a significant impact on overall customer satisfaction. Furthermore, food quality (taste, food safety, menu variety, and food presentation), service reliability, environmental cleanliness, internal design, and tidy, well dressed employees were found to have significant influence on customer satisfaction by Liu and Jang (2009).

Namkung and Jang's (2007) investigation of how food quality is perceived in relation to satisfaction and behavioural intentions in mid- to upscale restaurants revealed that overall food quality significantly affects customer satisfaction and behavioural intentions. Subsequent analyses established that taste and presentation were the two greatest contributors

to customer satisfaction and behavioural intentions. Ha and Jang (2010) in a study investigating the effect of service quality and food quality in Korean ethnic restaurant concluded that providing quality food is particularly critical for creating customer satisfaction. Similarly, Min and Min (2011) examined service quality and customer satisfaction in fast food restaurant franchises in the USA. The results of their study revealed that the taste of food was the most important service attribute on fast food restaurant customers' impressions of service quality and subsequently satisfaction.

METHODOLOGY

A qualitative research was applied in exploring the attributes of Chinese fast food service quality. Following, a quantitative method was adopted to test the scale and evaluate the relationship between service quality and customer satisfaction. In order to identify and narrow down the key factors and the related attributes explaining service quality in the Chinese fast food restaurant sector, an interview guide was developed so that all interviews could be conducted in a relatively consistent manner. Ten customers who were willing to participate, at one of the target restaurants, were interviewed. The interviews took an average of 25 minutes. From the interviews some significant themes emerged. Additional qualitative data were collected via focus group interview, as part of this, the research was discussed with six supervisory staff at two restaurants. These individuals were asked to suggest items which should be added in the survey. Their suggestions were compared with the original DINESERV instrument which has only general tangible clues. As a result, food quality and cleanliness of restroom items were included.

The survey instrument used in this study consists of items relating to respondents' profile, consumption behaviour and pattern, and customer satisfaction. Customer satisfaction was

measured by a single question: “Overall, are you satisfied with the Chinese fast-food restaurant offering?" (after Gilbert and Veloutosou 2006). The last section contained 28 statements about the service quality which were measured by five-point Likert scale. The questionnaire was developed in English originally; however, it was conducted in Chinese. In order to guarantee the quality of translation, the back-translation method (after Kim, McCahon and Miller, 2003) was applied. The questionnaire was pre-tested on 20 customers. The results of the pilot study were used to generate the latest version of the questionnaire and new data was collected from a larger population. The two Chinese fast food restaurants: Zhengongfu and TaibeiDoujiang were chosen due to their proximity and access to data gathering. Having been given permission to collect data at the two fast-food restaurants, assistance was sought with questionnaire administration. Convenience sampling method was preferred to ensure high response rate. Two hundred and five questionnaires were returned in a usable quality out of 280 that was distributed, representing 73.21% adjusted response rate. Descriptive statistics were first utilised; subsequently principal component factor analysis was conducted by using varimax rotation to determine the dimensions of Chinese fast food service quality.

FINDINGS AND DISCUSSION

Among the 205 usable questionnaires, 108 (52.68%) questionnaires were collected from the Zhengongfu restaurant while 97 (41.32%) questionnaires were collected from the TaibeiDoujiang restaurant. According to descriptive statistics, there were lesser male respondents (42%) than female respondents (58%). The gender proportion of this study was consistent with the outcome of similar research employed by Qin et al. (2010). Nearly 70% respondents were individuals in the age range of 20 to 40 years. This finding is consistent with previous studies that examine the young customers segment in food service industry.

According to Murray and Zentner (2001) most of Chinese fast food restaurants' customers are young people who are financially independent with stable careers. Buzalka (2000) also noted that young adults view eating out as part of their daily lives as well as the natural state of affairs.

Table 2. Respondents' profile

Chinese fast food restaurants service quality

Table 3 shows the 28 statements indicating respondents' opinions about the surveyed Chinese fast food restaurants in descending order of respondents' agreements. Overall, respondents' feelings about the service quality at the two Chinese fast-food restaurants are relatively positive. Out of the 28 items only 4 items have a mean of 4 indicating "agree". All the other items have mean value between 3.99 and 3.10 indicating that some of the responses are "Neither agree nor disagree".

Mean values (M) for two restaurants are calculated and compared to each other in the further phase. The highest rated statement in Zhengongfu restaurant is 'The menu is easily readable' with a mean value of 4.91. This represents that the majority of the customers of Zhengongfu restaurant considered the menu as easily readable. In TaibeiDoujiang restaurant, the statement 'The FFR provides an accurate guest check' is the highest rated item with mean of 4.02. This item in Zhengongfu restaurant is also highly rated (M=4.09). This indicates that the majority of the customers in the two restaurants were pleased with this attribute of their experience. The lowest rating of the listed statements in the TaibeiDoujiang restaurant is 'The staff members are both able and willing to give you information about the menu' with a mean value of 3.02. This indicates that the managers of this restaurant need to look into how the

attribute of their service can be improved. In Zhengongfu restaurant, the lowest rated item is the statement 'There is variety of food choices' (M=2.92). Again, a managerial implication surfaces here for Zhengongfu restaurant operators in terms of performance of availability of variety of food choices. For the issues about cleanliness, customers in the two restaurants were happy with cleanliness of the dining areas, tableware and staff appearance. Over 91% of customers in Zhengongfu restaurant agreed with the cleanliness of the restaurants in these three areas. Agreement is slightly lower in TaibeiDoujiang restaurant with over 71% customers in agreement. However, only 66% and 32% of customers at Zhengongfu and TaibeiDoujiang restaurants respectively stated that they perceived high level of cleanliness in the restrooms. Also, this result is consistent with the customer interview responses. It seems the restroom attribute is a weakness in Chinese fast food restaurants in terms of cleanness.

Food is often considered as the most important component in dining out experience. Food quality was rated somewhat similarly in the two restaurants. The items in this dimension have similar means for the two restaurants except for two statements: for 'Food tastes good', TaibeiDoujiang mean value is relatively high (M=3.92) than Zhengongfu (M=2.96). It is obvious that customers' consider food taste in TaibeiDoujiang is better than in Zhengongfu. In addition, 'there are various food choices', has relatively low mean value (M=2.92) in Zhengongfu than TaibeiDoujiang (M=3.58). Overall, in terms of food quality, TaibeiDoujiang has higher mean values (3.71, 3.81 3.58) than Zhengongfu has (3.58, 3.68, 3.18) considering the freshness of the food, the temperature of the food and food portion size respectively. These ratings are supported by the responses to the open-ended questions (see Appendix 1 for a full list of responses). For example, many of the suggestions for improvement relate to food quality e.g. developing the taste of the food and ensuring food

variety. Clearly, it is supported that TaibeiDoujiang has a relatively higher food quality. The Zhengongfu restaurant service providers should improve its food quality in the future.

Apart from these, customers are generally not happy with the interaction process with staff to some degree. The majority of low rated statements were related to "staff", such as 'The staff can answer your questions completely,' and 'The staff seemed well trained, competent and experienced'. These statements all have a same mean value of 3.22. 'The staff shift to help each other maintain speed of the service during busy times' and 'The staff members are sensitive to individual needs and wants rather than always relying on policy and procedures', which have relatively low mean values of 3.52 and 3.41 respectively. This dimension should be taken into consideration in the future for most managers in the Chinese fast food sector.

Table 3. Descriptive statistics for service quality attributes in fast food restaurants

Principal component analysis with varimax rotation was applied to test the convergent validity and factor loadings of items (after Hair et al., 2009). Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin Measure of Sampling Adequacy were used to determine the factorability of the data. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy test varies between 0 and 1. The Kaiser-Meyer-Olkin (KMO) overall measure of sampling adequacy (MSA) was calculated as 0.886 which according to Kaiser (1974) is acceptable. Since the KMO was above 0.80, the variables are assumed to be interrelated and share common factors. Barlett's Test of Sphericity value was 2976.778. The overall correlation is significant $p<0.01$. Both tests indicated that exploratory factor analysis could be conducted and the data were appropriate for factor analysis. A principal component analysis with varimax rotation was conducted in order to simplify the factor matrix and produce a conceptually pure factor. This criterion is based on Eigenvalue. Only the factors with eigenvalue equal to or greater than 1

were regarded as important. The principal component analysis started with 28 items using SPSS 18. After performing the principal component analysis with varimax rotation, the results revealed that the 28 item scale fell into 6 groups that had an eigenvalue of more than 1. All 28 items had loadings greater than 0.5, so, there was no item which should be removed. Table 4 shows that the six dimensions account for 63.851% of the total variation. The factor analysis produced dimensions that were different from the original DINESERV. This made the researchers to give new names for the dimensions. The naming of the new dimensions was connected to the literature in order to choose appropriate names.

Table 4. Chinese Fast Food Restaurants Service Quality Scale (CFFRSERV) Dimensions

Previous consumption experience

Table 5 below shows the frequency of respondents' Chinese fast food consumption. It is clear that majority of people surveyed consume Chinese fast food at least twice a month. A minority (3.41%) consume Chinese fast food once a month.

Table 5. Chinese fast food consumption experience

Effect of CFFR service quality on customer satisfaction

In order to investigate whether the dimension of the CFFRSERV had an impact on overall customer satisfaction, the customer satisfaction score was regressed against the summated scale of the six dimensions from the exploratory factor analysis.

Table 6 shows the results of the regression analysis with the six dimensions as independent variables and the customer satisfaction as the dependent variable. R square is used as an

indicator of the reliability of a relationship in the regression analysis. An adjusted R square of 0.509, indicated that 50.9 % of the overall customer satisfaction was explained by the service quality dimensions. The results indicate that service quality factors had positive impact on overall customer satisfaction. The findings were in line with commonly found in the literature (e.g. Cronin and Taylor, 1992; Oliver, 1997; Andaleeb and Conway, 2006; Kim et al., 2009) that improving service quality is helpful in enhancing customer satisfaction in restaurant context.

Table 6. The Influence of the Six Service Quality Factors on Customer Satisfaction

Regression coefficients from multiple regression analysis were used to identify the level of influence that service quality factors had on overall customer satisfaction. The findings indicated that the coefficients of five of the service quality dimensions were significant at 1% level, suggesting a positive relationship between customer satisfaction and food quality, assurance and empathy, cleanliness, and responsiveness. More specific, among the service quality dimensions, the relative importance of the significant predictors was determined by the size of standardised coefficients. The result indicated that food attained the highest standardised coefficient, which represents that the food factor is the best predictor ($\beta = .47$, $p<.001$). This means food makes the largest contribution, followed by assurance and empathy ($\beta = .414$, $p<.001$), responsiveness ($\beta = .233$, $p<.001$), cleanness factor ($\beta =.212$, $p<.001$) and tangibles factor ($\beta =.173$, $p<.001$). The least influence was made by reliability, which gained the lowest coefficient (0.077) and did not show a statistically significant relationship with the overall customer satisfaction. The result of the reliability dimension was surprising as it was not consistent with findings of other studies, such as Liu and Jang (2009) and Qin et al. (2010). Perhaps reliability of service among customers of Chinese fast food restaurant is

taken for granted.

Among the service quality dimensions, it was not surprising that “food quality” dimension was the most influential predictor of customer satisfaction in this study. In studies of fast food restaurants (e.g. Pettijohn et al., 1997) food quality was placed as one of the most influencing determinants of customers’ decision to repurchase. This element was more important than other dimensions. Furthermore, this result is also consistent with Ryu and Han (2010); whose study findings revealed that ‘quality of food’ such as deliciousness is a significant predictor of customer satisfaction in the quick-casual restaurant industry. The result also had similar conclusion with findings of research by Pettijohn et al., (1997), Kim et al., (2009), Sulek and Hensley (2004). Their analysis showed that quality of food, such as food taste and freshness, was the strongest predictor of customer satisfaction. In addition, the analysis also indicated that the “assurance and empathy” dimension of service quality was one of the most important to customers. Assurance and empathy factors are primarily associated with human performance (Parasuraman et al., 1988), in which the main focus is on service encounter. Service encounters have considerable potential for making a vital impression on consumers perception of service attributes at the Chinese fast food restaurants. According to Kohli and Jaworski (1990), attitudes and behaviours of employees can influence customers' perceptions of service quality. The third important dimension was “cleanliness”. The findings in this area in fast food restaurant context are congruent to Macaskill et al. (2000) study in Canada and Scarcelli’s (2007) Indiana, USA study. Responsiveness also had a positive impact on the overall customer satisfaction based on the regression analysis. As a result of the dynamic social and economic environment in China, Chinese people’s life style is getting busier than ever before. As a consequence, the responsiveness of the Chinese fast food restaurants to customers’ needs is undoubtedly becoming an important factor that influences customer

satisfaction. This result is consistent with the finding by Qin (2008).

CONCLUSIONS AND IMPLICATIONS

The findings of this study contribute to the improvement of service quality theory and provide deep understandings for management of the Chinese fast food industry in China. First, it fills a gap by modifying DINESERV instrument and by introducing CFFRSERV measurement scale. Because the DINESERV which was developed in the USA is based on cultural elements peculiar to the American, generalizability to other cultural context is questionable (Zhao et al., 2002). The present findings suggest that some factors important to Chinese customers are not included in the DINESERV scale. For instance, the food quality is the most significant dimension in service quality as well as the most significant predictor of customer satisfaction (see Namkung and Jang, 2007; Qin and Prybutok, 2009; Min and Min 2011). This new measurement scale (CFFRSERV) therefore arguably measures service quality effectively in the Chinese fast food restaurant context as it was formulated and tested in Chinese context.

The findings of this study also highlight some practical implications. The significance of assurance and empathy suggested that the expenditures in employee training and improving the food quality should be seen as necessary investments. The service providers should thus pay more attention to training and empowering their service employees to look for ways to make the dining experience an impressive one for their customers. The Chinese fast food operators can use this service quality measurement scale as an evaluation tool to assess the level of quality they provide to their consumers and to spot those dimensions and attributes of service where their companies require improvement.

This study is subjected to certain limitations. Firstly, the study was carried out on a small size sample and the sample was gained by convenience sampling. However, the sample in this study is more diverse compared to homogeneous sample used in some studies (e.g. Qin and Prybutok 2009). Future research in this area may want to utilise probability sampling and larger sample size. In addition, this study was conducted in one city: Changsha, there is a need to validate the CFFRSERV scale in other cities in China.

Further research is also needed to determine the factors that can influence customer satisfaction such as price, perceived value in order to increase the level of customer satisfaction in Chinese fast food sector. Another possible area for future research is to refine the current CFFRSERV within the Chinese fast food restaurants context and to explore new dimensions of perceived service quality in the fast food industry in China. Some attributes of service in China perhaps have not been captured by the CFFRSERV model. For instance, some Western fast food chains such as KFC have launched online order and delivery service in Beijing, Shanghai and other cities. Future research should examine the quality of these new services vis-à-vis Chinese fast food.

REFERENCES

Andaleeb, S. S., & Conway, C. (2006). Customer satisfaction in the restaurant industry: An examination of the transaction-specific model. *Journal of Services Marketing, 20*(1), 3-11.

Armistead, C. G. (1990). Service operations strategy: Framework for matching the service operations task and the service delivery system. *International Journal of Service Industry Management, 1*(2), 6-17.

Brady, M. K., & Cronin, J. (2001).Some thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing*, *65*(3), 34-49.

Brady, M. K., Robertson, C. J., & Cronin, J. (2001). Managing behavioural intentions in diverse cultural environments: An investigation of service quality, service value, and satisfaction for American and Ecuadorian fast-food customers. *Journal of International Management*, *7*(2), 129-149.

Bitner, M.J., Booms, B.H., & Tetreault, M.S. (1990). The service encounters: Diagnosing favorable and unfavorable incidents, *Journal of Marketing*, *54*(1), 71-84.

Bougoure, U. S., & Neu, M. K. (2010). Service quality in the Malaysian fast food industry: An examination using DINESERV. *Services Marketing Quarterly*, *31*(2), 194-212.

Buzalka, M. (2000). Catering to the suite life. *Food Management*, *35* (7), 54-58.

Chelladurai, P., & Chang, K. (2000). Targets and standards of quality in sport services. *Sport Management Review*, *3*(1), 1-22.

Cronin, J.J., & Taylor, S.A. (1992). Measuring service quality: Are examination and extension. *Journal of Marketing*, *56*, 55-68.

Dabholkar, P. A., Thorpe, D. I., & Rentz, J. O. (1995). A measure of service quality for retail stores: Scale development and validation. *Journal of the Academy of Marketing Science*, *24*(1), 3-16.

Euromonitor International (2013). Country Report: Fast Food in China [online]. Retrieved on February 6, 2014 from http://www.euromonitor.com/fast-food-in-china/report

Getty, J. M., & Getty, R. L. (2003). Lodging quality index (LQI): Assessing customers' perceptions of quality delivery. *International Journal of Contemporary Hospitality Management*, *15*(2), 94-104.

Gilbert, G. R., & Veloutsou C. (2006). A cross-industry comparison of customer satisfaction, *Journal of Services Marketing*, *20*(5), 298-308.

Grönroos, C. (1984). A service quality model and its marketing implication. *European Journal of Marketing*, *18*(4) 36-44.

Grönroos, C. (1990). *Service Management and Marketing*. Lexington, MA: Lexington Books.

Ha, J., & Jang, S. S. (2010). Effects of service quality and food quality: The moderating role of atmospherics in an ethnic restaurant segment. *International Journal of Hospitality Management*, *29*(3), 520-529.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2009). *Mutivariate Data Analysis*. 7th edition, Englewood Cliffs, NJ: Prentice Hall.

Johns, N., & Tyas, P. (1996). Use of Service Quality Gap Theory to differentiate between foodservice outlets. *The Service Industries Journal*, *16*(3), 321-46.

Kara, A., Kaynak, E., & Kucukemiroglu, O. (1995). Marketing strategies for fast-food restaurants: A customer view. *International Journal of Contemporary Hospitality Management, 7*(4), 16-22.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1), 31-36.

Kim, H.J., McCahon, C., & Miller, J. (2003). Assessing service quality in Korean casual-dining restaurants Using DINESERV. *Journal of Foodservice Business Research, 6*(1), 67-86.

Kim, W.G., Ng, C.Y.N., & Kim, Y. (2009). Influence of institutional DINESERV on customer satisfaction, return intention, and word-of-mouth. *International Journal of Hospitality Management, 28*, 10-17.

Kivela, J., Inbakaran, R., & Reece, J. (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.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *The Journal of Marketing*, 1-18.

Lee, H., Lee Y., & Yoo D. (2000). The determinants of perceived service quality and its relationship with satisfaction. *Journal of Services Marketing, 14*(3), 217-231.

Lehtinen, U., & Lehtinen, J. R. (1982). *Service Quality: A Study of Quality Dimensions*. Service Management Institute.

Lehtinen, U,. & Lehtinen, J. R. (1991). Two approaches to service quality dimensions. *Service Industries Journal*, *11*(3), 287-303.

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

Macaskill, L., Dwyer, J. J. M, Uetrecht, C., Dombrow, C., Crompton, R., Wilck, B. & Stone, J. (2000). An evaluability assessment to develop a restaurant health promotion program in Canada. *Health Promotion International, 15*(1), 57–69.

Markovic, S., Raspor, S., & Sergaric, K. (2010). Does restaurant performance meet customers' expectations? An assessment of restaurant service quality using a modified DINSERV approach. *Tourism and Hospitality Management*, *16*(2), 181-195.

Mei, A. W. O., Dean, A. M., & White, C. J. (1999). Analysing service quality in the hospitality industry. *Managing Service Quality*, *9*(2), 136-143.

Mehta, S. C., Lalwani, A. K., & Han, S. L. (2000). Service quality in retailing: relative efficiency of alternative measurement scales for different product-service environments. *International Journal of Retail & Distribution Management, 28*(2), 62-72.

Min, H., & Min, H. (2011). Benchmarking the service quality of fast-food restaurant franchises in the USA. *Benchmarking: An International Journal*, *18*(2), 282-300.

Mohsin, A. (2005). Service quality perceptions: an assessment of restaurant and café visitors in Hamilton. New Zealand, *The Business Review*, *3*(2), 51-57.

Murray, R.B. & Zentner, JP. (2001). *Health promotion strategies through the life span*. 7th edition, New Jersey: Prentice Hall.

Namkung, Y., & Jang, S. (2007). Does food quality really matter in restaurants? Its impact on customer satisfaction and behavioral intentions. *Journal of Hospitality and Tourism Research*, *31*(3), 387-409.

OECD (2013). *Urbanisation and Green Growth in China*, OECD Regional Development Working Papers, 2013/07, OECD Publishing. http://dx.doi.org/10.1787/5k49dv68n7jf-en.

Oliver, R.L. (1997). *Satisfaction: A Behavioural Perspective on the Consumer*. New York, NY: McGraw-Hill.

Oliver, R.L. (1981). Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing*, *57*(3), 25-48.

Olorunniwo, F., & Hsu, M. K. (2006). A typology analysis of service quality, customer satisfaction and behavioral intentions in mass services. *Managing Service Quality*, *16*(2), 106-123.

Oyewole, P. (1997). Multi-attribute dimensions of service quality in the fast food restaurant industry. *Journal of Restaurant & Foodservice Marketing*, *3*(3-4), 65-91.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41-50.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1988). SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, *64*(1), 12-40.

Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and Reassessment of the SERVQUAL Scale, *Journal of Retailing*, *67*(4), pp. 420-450.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (2004). Refinement and reassessment of the SERVQUAL scale. *Journal of retailing*, *67*(4), 114.

Pettijohn, L.S., Pettijohn, C.E., & Luke, R.H. (1997). An evaluation of fast food restaurant satisfaction: Determinants, competitive comparisons and impact on future patronage. *Journal of Restaurant and Foodservice Marketing*, *2* (3), 3-20.

Qin, H., & Prybutok, V.R. (2008). Determinants of customer-perceived service quality in fast food restaurants (FFRs) and their relationship to customer satisfaction and behavioural intentions. *Quality Management Journal*, *15*(2), 35-50.

Qin, H., & Prybutok, V. R. (2009). Service quality, customer satisfaction, and behavioral intentions in fast-food restaurants. *International Journal of Quality and Service Sciences*, *1*(1), 78-95.

Qin, H., Prybutok, V. R., & Zhao, Q. (2010). Perceived service quality in fast-food restaurants: Empirical evidence from China. *International Journal of Quality & Reliability Management, 27* (4), 424-437.

Raajpoot, N. A. (2002). TANGSERV: A multiple item scale for measuring tangible quality in foodservice industry. *Journal of Foodservice Business Research, 5*(2), 109-127.

Research and Markets (2011). Research Report on China Fast Food Industry - 2011-2012 [online]. Retrieved February 6 2014 from http://www.researchandmarkets.com/reports/1511788/research_report_on_china_fast_food_industry

Rust, R. T., & Oliver, R. L. (1994). Service quality: Insight and managerial implication from the frontier, in R. T. Rust and R. L Oliver (eds) *Service Quality: New Direction in Theory and Practice.* Thousand Oak, CA: SAGE Publications.

Ryu, K., & Han, H. (2010). Influence of the quality of food, service, and physical environment on customer satisfaction and behavioural intention in quick-casual restaurants: Moderating role of perceived price. *Journal of Hospitality & Tourism Research, 34*(3), 310-329.

Scarcelli, J. (2007). Clean Restaurant Restrooms: Do they Indicate a Clean Kitchen? Published Masters Thesis, Purdue University, West Lafayette, Indiana.

Spreng, R. A., & Mackoy, R. D. (1996). An empirical examination of a model of perceived

service quality and satisfaction, *Journal of retailing*, *72*(2), 201-214.

Stevens, P., Knuston, B., & Patton, M. (1995). DINESERV: A tool for measuring service quality in restaurants. *Cornell Hotel and Restaurant Administration Quarterly*, *36*(2), 56-60.

Sulek, J. M., & Hensley, R. L. (2004). The Relative Importance of Food, Atmosphere, and Fairness of Wait The Case of a Full-service Restaurant. *Cornell Hotel and Restaurant Administration Quarterly*, *45*(3), 235-247.

Tashakkori, A., & Teddlie, C. (Eds). (2003). *Handbook of Mixed-methods in Social and Behavioural Research*. Thousand Oaks, CA : Sage.

Ting, D. H. (2004). Service quality and satisfaction perceptions: Curvilinear and interaction effect. *International Journal of Bank Marketing*, *22*(6), 407-420.

Tomlinson, M. (2003). Lifestyle and social class. *European Sociological Review*, *19*(1), 97-111.

Zhao, X., Bai, C., & Hui, Y.V. (2002). An empirical assessment and application of SERVQUAL in a mainland Chinese department store.*Total Quality Management*, *13* (2), 241-254.

Appendix1: Responses to Open-ended questions (number of responses in parenthesis)

Question 1: What do you like best about the restaurants?

TaibeiDoujiang Restaurant

- There were many kinds of food to choose from (2)
- The staffs were friendly and welcoming (2)
- The service is convenient (5)
- I appreciate the environmental cleanliness (6)
- The location of the restaurant is near to where I am working (6)
- I like the taste of the food (27)

Zhengongfu Restaurant

- I like the taste of the food (1)
- Take away service is efficient. (1)
- The price is reasonable (1)
- I enjoy the decoration of the restaurant (3)
- The environment is comfortable (3)
- The staff members are friendly and welcoming (3)
- The service is convenient (7)
- The location of the restaurant is near to where I am working (8)
- I appreciate the healthy food in the restaurant (21)
- The service speed is fast (27)
- I appreciate the environmental cleanliness (29)

Question 2: How could this restaurant be improved?

TaibeiDoujiang Restaurant

- Provide a more comfortable dining environment (1)
- Improve take-away service efficiency (1)
- Improve the food quantity (4)
- Improve the staff attitude (4)
- Improve the environmental cleanliness (5)
- Improve the service speed (7)
- Improve the food variety (8)
- Enhance staff professional skill (15)
- Improve the taste of the food (38)

Zhengongfu Restaurant

- Improve take-away service efficiency (1)
- Improve individual attention (1)
- Improve the environmental cleanliness (1)
- Provide a more comfortable dining environment (1)
- Provide sales promotion (3)
- Improve the staff attitude (4)
- Improve the food quantity (9)
- Offer reasonable price (9)
- Enhance staff professional skill (17)
- Improve the food variety (30)
- Improve the taste of the food (38)

Table 1. *Service Quality Dimensions*

Model/Dimension	**Physical Environment**	**Human Interactions**	**Core product**
Lehtinen and Lehtinen (1982)		Process Quality	Outcome Quality
Grönroos (1984)		Functional Quality	Technical Quality
Parasuraman, Zeithaml, and Berry (1988)	Tangibles	Reliability Responsiveness Assurance Empathy	
Armistead (1990)	Firm	Soft	
Lehtinen and Lehtinen (1991)	Physical Quality	Interactive Quality	
Rust and Oliver (1994)	Service Environment	Service Delivery	Service Product
Dabholkar, Thorpe, and Rentz (1995)	Physical Aspects	Personal Interactions Reliability	
John and Tyas (1996)	Tangibles Tangibles 2	Reliability Responsiveness Assurance Empathy	Food
Mei, Dean and White (1999)	Tangibles	Reliability Employee	
Brady and Cronin (2001)	Physical Environment Quality	Interaction Quality	Outcome Quality
Getty and Getty (2003)	Tangibles	Reliability Responsiveness Confidence Communication	
Qin, Prybutok and Zhao (2010)	Tangibles	Reliability Responsiveness Assurance Empathy Recovery	

Table 2. *Respondents' profile*

Categories	Frequency	%
Gender		
Female	119	58
Male	86	42
Age		
19 and below	27	13.25
20 – 29	65	31.7
30 – 39	77	37.6
40 – 49	17	9.3
50 – 59	13	6.3
60 and above	4	2.0

Table 3. *Results of variability*

Variable	**Mean**		***DS***	***D***	***N***	***A***	***AS***
The menu is easily readable	T :3.92 Z :4.91	4.13		1	19	138	47
The FFR provide an accurate guest check.	T :4.02 Z :4.09	4.07	-		13	165	27
Staff members are clean, neat and dressed properly.	T: 3.90 Z: 4.06	4.01	-	-	20	162	23
The FFR has clean dining area	T: 3.73 Z: 4.10	4.00	-	1	28	147	29
The tableware in the FFR is clean	T: 3.80 Z: 4.07	3.99	-	-	27	153	25
The FFR provides prompt and quick service.	T:3.63 Z:3.87	3.91	-	1	34	153	17
The service is dependable and consistent	T:3.75 Z:3.90	3.85	-	-	39	157	9
The staff serves your food exactly as you ordered it	T:3.66 Z:3.88	3.81	-	1	44	152	8
The FFR has a dining area which is easy to move around in.	T:3.63 Z:3.87	3.80	-	2	55	130	18
The FFR serves you in the time promised	T:3.58 Z:3.88	3.78	-	2	54	137	12
The decoration is in keeping with its image and price range.	T:3.90 Z:3.71	3.76	-	5	57	125	18

The take-away service in the FFR is competent and efficient	T:3.58 Z:3.81	3.74	-	5	59	125	16
Food serves at the correct temperature.	T:3.81 Z:3.68	3.72		5	56	136	8
The FFR quickly corrects anything wrong.	T:3.66 Z:3.73	3.71		2	60	139	4
Food is fresh	T:3.71 Z:3.58	3.62	1	2	78	117	7
The employees are sympathetic and reassuring if something is wrong.	T:3.49 Z:3.64	3.60		1	83	118	3
The FFR has clean restrooms	T: 3.25 Z: 3.69	3.57		7	82	109	7
The staff has good attitude and willing to talk to you	T:3.49 Z:3.60	3.57		1	9	109	4
The staff makes you feel confident when you dealing with them.	T:3.42 Z:3.59	3.54		2	95	103	5
The staff was courteous and friendly	T:3.42 Z:3.58	3.54		2	94	106	3
The staff shift to help each other maintain speed of the service during busy times.	T:3.49 Z:3.53	3.52		9	88	100	8
The staff members are sensitive to individual needs and wants rather than always relying on policy and procedures.	T:3.25 Z:3.48	3.41		11	101	90	3
Food is served in good portions	T:3.58 Z:3.18	3.29	1	32	81	89	2
Food tastes good.	T:3.92 Z:2.96	3.23	3	30	102	56	14
The staff seemed well trained, competent and experienced.	T:3.03 Z:3.30	3.22		28	104	72	1
The staff can answer your questions completely	T:3.03 Z:3.29	3.22		24	113	67	1
Food choices are various	T:3.58 Z:2.92	3.11	3	35	103	64	
The staff members are both able and willing to give you information about the menu	T:3.02 Z:3.13	3.10	1	30	124	48	2
Total			9	235	1822	3267	321

Table 4. *CFFRSERV Dimensions*

Factor and Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
F1- Assurance & Empathy						
The staff have good attitude and willing to talk to you	.861					
The staff was courteous and friendly	.844					
The employees are sympathetic and reassuring if something is wrong.	.711					
The staff makes you feel confident when you dealing with them.	.683					
The staff seemed well trained, competent and experienced.	.650					
The staff is sensitive to individual needs and wants rather than always relying on policy and procedures.	.644					
The staff can answer your questions completely.	.631					
The FFR quickly corrects anything wrong.	.600					
F2 - Cleanliness						
The FFR has clean restrooms		.770				
The FFR has clean dining area		.763				
The tableware in the FFR is clean		.762				
Staff members are clean, neat and dressed properly.		.736				
F3 - Food quality						
Food tastes good.			.815			
Food serves at the correct temperature.			.658			
Food is fresh			.637			
Food choices are various			.610			
Food serves good portions			.601			
F4 - Reliability						
The staff serve your food exactly as you ordered it				.718		
The FFR provide an accurate guest check.				.716		
The FFR serves you in the time promised				.673		
The service is dependable and consistent				.521		

F5 - Responsiveness						
The staff shifts to help each other maintain speed of the service during busy times.					.699	
The take-away service in the FFR is competent and efficient					.575	
The FFR provides prompt and quick service.					.569	
The staff members are both able and willing to give you information about the menu					.520	
F6-Tangibles						
The FFR has a dining area which is easy to move around in.						.760
The decoration is in keeping with its image and price range.						.695
The menu is easily readable						.635
Eigenvalue	9.535	2.769	1.976	1.266	1.236	1.096
Variance explained (%)	34.054	9.888	7.057	4.522	4.415	3.914
Cumulative variance explained (%)		43.942	50.999	55.521	59.936	63.851
Cronbach's alpha	0.907	0.847	0.731	0.771	0.789	0.723

Table 5. *Chinese fast food consumption experience*

Categories	Frequency	%
Once per month	7	3.41
Twice per month	29	14.14
3-5 times per month	68	33.17
6-10 times per month	45	21.95
11- 20times per month	28	13.66
21- 30times per month	19	9.27
31 times and more	5	2.44

Table 6. *The Influence of the Six Service Quality Factors on Customer Satisfaction*

R	R Square	Adjusted R Square	Std. Error of the Estimate	df	F	sig
.723(a)	.523	.509	.425	6	32.248	.000

Regression coefficients

Variables	**Beta**	**t**	**Sig.**
Food	.470	9.586	.000*
Assurance & Empathy	.414	8.441	.000*
Cleanness	.233	4.555	.000*
Responsiveness	.212	4.330	.000*
Tangibles	.173	3.250	.001*
Reliability	.077	1.570	.118

$p<0.01$