Restaurateurs' perceptions of location and design

JR Roberson & *IC Kleynhans
Department of Hospitality Management
Tshwane University of Technology
e-mail: kleynhansic@tut.ac.za
(072 382 6517)

*corresponding author

Abstract

The aim of this paper is to gather the perceptions of restaurateurs on restaurant location and design dimensions. In this study the researcher tested the perceptions of restaurateurs using thirteen layout and design dimensions evident in the independent full-service restaurant segment. The outcomes to be tested were presented to restaurateurs in a questionnaire uploaded on a web-based research system "*survey monkey*". This was emailed to 3 286 restaurateurs with 303 responses being received. Interestingly respondents perceive the ambience of a restaurant (M=3.34) and toilet facilities (M=3.34) to be the most important location and design aspects that influence customer satisfaction when dining out. This is significant because most restaurateurs spend the largest part of their marketing budget on promoting the food quality price.

Keywords: location, design, customer satisfaction, quality dimensions, restaurants, tangibility.

Source: http://www.telegraph.co.uk

INTRODUCTION

With the restaurant industry having low entry barriers (relative ease of opening a restaurant), restaurants are extremely competitive. To ensure long-term success restaurateurs need to have a thorough understanding of specific management theory and practice that forms an integral part of a restaurant's quality differentiation strategy. When planned for correctly, location and design contributes significantly to a quality differentiation strategy.

SERVICE QUALITY DIMENSIONS

Restaurant service quality comprises three elements:

- Environmental: location, design, music and lighting;
- Employees' skill and reliability and
- Customer interaction (Markovic, Raspor & Dorcic, 2011).

In their quest to understand and shed light on these service-quality elements, researchers have identified and described various dimensions of quality (Chowdhary & Prakash, 2007). A dimension is deemed important when it can be demonstrated that a correlation exists between a dimension and certain outcomes or customer behaviour. Acknowledging the importance of meeting customer quality demands, researchers have developed a number of scales to measure service quality (Brad, Cronin & Brand, 2002). These scales feature varying combinations of service quality dimensions. Scales that include location or/and design dimensions are: SERVQUAL, LODGESERV, SERVPERF, SERVICESCAPE, LODGQUAL, DINESERV, TANGSERV, Lodging Quality Index, DINESCAPE, CLEANSAT, DinEX and HOLSERV (AbuKhalifeh & Som, 2012; Barber, Goodman & Goh, 2010; Barber & Scarcelli, 2010; Crick & Spencer, 2011; Getty & Getty, 2003; Qin, Prybutok & Zhao, 2010). All these scales developed by researchers include location and design dimensions because findings indicate that they are vital contributors to customer satisfaction.

LOCATION

The location of a restaurant has an substantial influence on its economic success. The following business aspects have a direct influence the location decision (Hsu, 2009; Ingram, 1996):

- Cost of lease or mortgage
- Number of potential customers
- Access roads
- Parking
- Visibility of restaurant
- Traffic conditions
- Neighbourhood
- Growth potential
- Proximity of competitors
- Safety and security

DESIGN

Attractive appearance of the SERVICESCAPE dimensions namely, interior design, ambience, spatial layout and human element impact positively on service quality (Wang & Chen, 2012). The design of the exterior of the building as well as interior, specifically the dining-room, influences diners' quality perceptions. Furniture design and layout influence a diners' sense of privacy (Ryu, Lee & Kim, 2012). The following items are added to the design dimension of restaurant quality (Ryu & Jang, 2008):

- Aesthetics
- Ambience
- Lighting
- Layout
- Table setting

RESEARCH DESIGN AND DATA COLLECTION

This research project consists of a review and synthesis of existing literature on restaurant location and design theory. Once the literature

has been reviewed, the current situation at restaurants will be investigated.

For this study data were collected in numerical format, therefore a quantitative approach was adopted. As participants were required to provide data, the study is interrogative in nature. The study dictated ex-post-facto design, as none of the variables could be controlled. With the data being collected once only, the collection method can be compared to a snapshot. This is known as a cross-sectional study. However the fact that variables are measured from respondents' responses to questions classifies the study as a survey. As huge volumes of data needed to be collected, a self-administered questionnaire, as suggested by Mouton (2012) was developed. Restaurateurs' perceptions of location and design dimensions of restaurants were measured using responses to questions on the questionnaire, while evaluation and meaning were based on statistical analysis and interpretation. Four different types of research can be identified: exploratory, descriptive, analytical and predictive. Exploratory research is undertaken when very little information on a phenomenon is available. This can be applied in this instance because perceptions of restaurant grading have never been tested in South Africa. As the researcher intends to analyse and describe perceptions, the project can also be classified as descriptive research (Mouton, 2005). Elements from both exploratory and descriptive research were employed to determine location and design perceptions.

Questionnaire

The self-administered questionnaire tested thirteen location and design items. To avoid selection of a middle value by respondents (Allen & Seaman, 2007), a four-point Likert scale was used. The scale is an ordinal scale that allows respondents to rate their perceptions along a continuum.

The researcher used a questionnaire to collect data, because it is a quick, cost-effective method that ensures anonymity, lends itself to standard statistical analysis, and accommodates maximum participation by a large number of participants (Coldwell & Herbst, 2004).

Sample selection

When testing perceptions it is important to ensure maximum participation therefore the questionnaire was sent to the entire population of restaurateurs of independent full-service restaurants, that had e-mail addresses. The sample selection method used is convenience sampling (Coldwell & Herbst, 2004). In normal circumstances there are concerns regarding reliability when this sampling technique is used. This however is not true in this case as the number of restaurants with email addresses was large while the number of those without e-mail addresses was negligible.

Survey Monkey

The web-based research system "survey monkey" was selected to administer the questionnaire to participants. This program emails a link to the participants and then records their responses. The researcher compiled an email address database of participants (restaurateurs of independent full-service restaurants) from four sources, the Yellow pages directory, Brabys business directory, Eat out guide as well as general Google searches. A database of 3 268 email addresses was compiled over a three-month period. Restaurant names or parts of names, where two or more were identical, were not included in the list as this is a clear indication that the establishment is part of a franchise. Once the pilot study had been completed the email addresses of the sample were added to the "survey monkey" mailing list. On Sunday, 21 April 2013 the first requests for participation were emailed.

Responses

On 10 June 2013 the survey was officially closed so that data could be uploaded onto SPSS. Of the 3 286 email addresses on the

data base, 470 (14.3%) were either inactive or incorrect. The survey was subscribed to by 2 816 participants. The 303 responses received were used to determine the location and design perceptions of restaurateurs.

The number of completed questionnaires is considered to be acceptable when this is compared to a similar international study where 115 completed questionnaires were regarded adequate for a study on service quality in the banking sector (Bahla & Nantel, 2000). In another study, to determine customer value factors, 247 questionnaires were completed (Yuncu, Oktay & Yalcin, 2013).

Data analysis

The data analysis was done using SPSS20. Demographic data collected provide information regarding gender, age and size of these restaurants that formed part of the study. This demographic data could conceivably assist future researchers on independent full-service restaurants as no such data has ever been collected. Data on location and design perceptions were

presented as numbers and percentages, as well as ranked according to means.

Exploratory factor analysis was also done to identify patterns and correlations. The following values were determined and reported on: Pearson's product-moment correlation coefficient, Kaiser-Meyer-Olken value, Barltlett's test of sphericity, Cronbach's Alpha and eigenvalues. Cluster analysis was done to reveal groupings that may exist in the data itself.

RESULTS

MEAN SCORES OF PERCEPTIONS OF LOCATION AND DESIGN

Respondents were asked to rate their perceptions of location and design Table 1 provides the numbers, percentages and mean scores of responses to restaurant location and design perceptions. The restaurateurs ranked design aspects higher than location dimensions. The ranked mean scores are reflected in Figure 2.

Table 1: Location and design

Location and design	Strongly Disagree	Disagree	Agree	Strongly Agree	Total	Mean
Restaurant location (proximity to customers)	19	30	111	143	303	3,25
	6.3%	9.9%	36.6%	47.2%	100.0%	
Restaurant access (adequate road network)	13	33	101	156	303	3,32
	4.3%	10.9%	33.3%	51.5%	100.0%	
Restaurant parking (sufficient, secure and demarcated)	20	40	98	145	303	3,21
	6.6%	13.2%	32.3%	47.9%	100.0%	
Restaurant building (modern / traditional)	39	95	105	64	303	2,64
	12.9%	31.4%	34.7%	21.1%	100.0%	
Restaurant furnishings and equipment (quality and condition)	11	55	129	108	303	3,1
	3.6%	18.2%	42.6%	35.6%	100.0%	
Restaurant plan allows for privacy / intimacy (partitions)	33	96	110	64	303	2,68
	10.9%	31.7%	36.3%	21.1%	100.0%	

Location and design	Strongly Disagree	Disagree	Agree	Strongly Agree	Total	Mean
Restaurant temperature (comfortable in all areas)	13	37	132	121	303	3,19
	4.3%	12.2%	43.6%	39.9%	100.0%	
Restaurant ambience (ethnic, regional / country style)	13	25	111	154	303	3,34
	4.3%	8.3%	36.6%	50.8%	100.0%	
Table appointments / cutlery, crockery (style and quality)	11	53	131	108	303	3,11
	3.6%	17.5%	43.2%	35.6%	100.0%	
Menu and wine list (theme and appearance)	9	31	121	142	303	3,31
	3.0%	10.2%	39.9%	46.9%	100.0%	
Restaurant lighting (low, dim)	11	43	150	99	303	3,11
	3.6%	14.2%	49.5%	32.7%	100.0%	
Restaurant linen (quality and cleanliness)	15	39	105	144	303	3,25
	5.0%	12.9%	34.7%	47.5%	100.0%	
Restaurant toilets (attractive appearance, quality and cleanliness)	14	31	97	161	303	3,34
	4.6%	10.2%	32.0%	53.1%	100.0%	

The highest mean score was allocated to attractive/clean toilets and the second highest score was restaurant ambience. The dimension with the third highest means score was the restaurant access and location dimension. The design dimension that received the lowest score was whether the restaurant setup allowed for privacy and the location dimension with the lowest score, was the restaurant building itself. In a study by Cadotte and Turgeon (1988) 26 food service quality dimensions were ranked. Their study included some of the dimensions reported on in this study. Cleanliness and neatness of the establishment were ranked fourth and fifth, respectively. The dimensions that were ranked higher were all food-quality related. Therefore their results seem to support the finding that cleanliness of restaurant toilets is cardinal. The ranking for restaurant setup, parking and access were ranked as 18th, 19th and 26th, respectively. These results seem to contradict the results obtained when other respondents allocated mean scores of these aspects, as 2.68, 3.21 and 3.32, respectively. Alonso and O'Neill (2010) identified the following restaurant design factors (ranked according to means score) starting with physical appearance of restaurant, restaurant theme and restaurant setup allowing for privacy. These findings support the degree of importance that is attached to restaurant design aspects in ensuring quality service delivery.

Source:http://conradhotels3.hilton.com/resources/media/ch/MLEHICI/en_US/img/
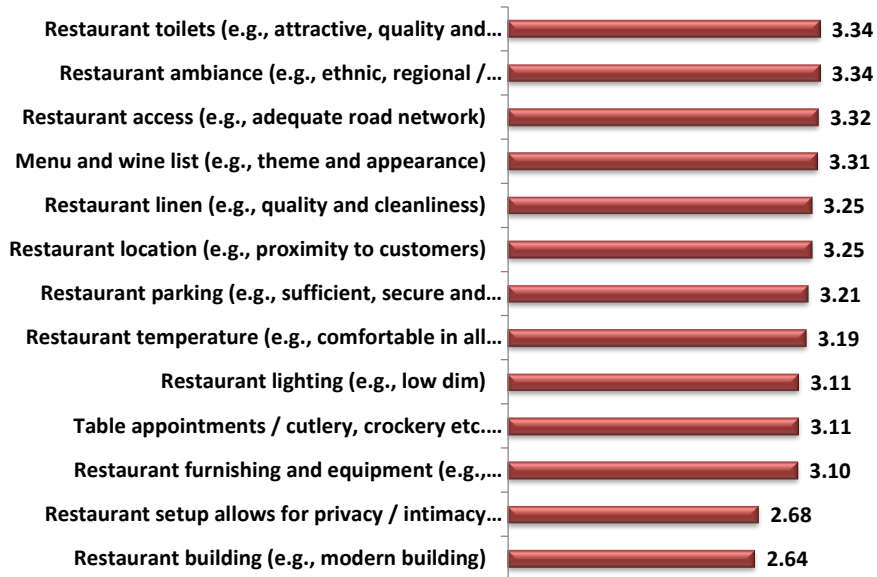
Restaurant toilets (e.g., attractive, quality and…	3.34
Restaurant ambiance (e.g., ethnic, regional /…	3.34
Restaurant access (e.g., adequate road network)	3.32
Menu and wine list (e.g., theme and appearance)	3.31
Restaurant linen (e.g., quality and cleanliness)	3.25
Restaurant location (e.g., proximity to customers)	3.25
Restaurant parking (e.g., sufficient, secure and…	3.21
Restaurant temperature (e.g., comfortable in all…	3.19
Restaurant lighting (e.g., low dim)	3.11
Table appointments / cutlery, crockery etc.…	3.11
Restaurant furnishing and equipment (e.g.,…	3.10
Restaurant setup allows for privacy / intimacy…	2.68
Restaurant building (e.g., modern building)	2.64

Figure 1: Location and design mean scores ranked

AN EXPLORATORY ANALYSIS OF LOCATION AND DESIGN PERCEPTIONS

To reduce dimensionality of data, patterns of correlations among the questions in this section were subjected to principal component analysis (PCA) using the statistical programme for social science version 20 (SPSS 20).

Thirteen questions covering various location and design aspects, that could influence the satisfaction levels of customers, were tested. Prior to performing PCA the suitability of the data for factor analysis was assessed. The relationships among the 13 variables that were measured on a scale of one to four to indicate the extent to which the participants believed their customers were influenced by these location and design aspects of their restaurants, were investigated using Pearson's product-moment correlation coefficient. Preliminary analyses were performed to ensure that the assumptions of normality, linearity and homoscedasticity were not violated. Inspection of the correlation matrix confirmed the presence of a number of coefficients of 0.3 and above. Furthermore, the Kaiser-Meyer-Olkin value of 0.896 including all the items, far exceeded the recommended minimum value of 0.6 (Kaiser, 1974) while the Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance, $p < .001$, supporting the factorability of the correlation matrix.

Two of the items, namely Q10 and Q12, were excluded in the final analysis. Q12 was excluded since it had a commonality of less than 0.4. As Q10 subsequently ended up in one factor only, it was also excluded. The remaining factors are listed in Table 2.

Table 2:   Commonalities of location and design

Commonalities of the 13 items (Principal Component Analysis)	Initial	Extraction
Restaurant location (proximity to customers)	1.000	.658
Restaurant access (adequate road network)	1.000	.773
Restaurant parking (sufficient, secure and marked)	1.000	.648
Restaurant furnishing and equipment (quality and condition)	1.000	.602
Restaurant temperature (comfortable in all areas)	1.000	.607
Restaurant ambience (ethnic, regional / country style)	1.000	.498
Table appointments / cutlery, crockery (style and quality)	1.000	.631
Menu and wine list (theme and appearance)	1.000	.503
Restaurant lighting (low dim)	1.000	.597
Restaurant linen (quality and cleanliness)	1.000	.659
Restaurant toilets (attractive appearance, quality and cleanliness)	1.000	.609

PCA using the remaining 11 items revealed the presence of two components with eigenvalues exceeding one, cumulatively explaining 61.671 percent of the variance in the data. Inspection of the scree plot (Figure 2) revealed an inflection point at the third factor.

On the basis of the scree test, it was decided to retain these two components for further investigation. Q10 and Q12 would individually be considered as separate components (Catell & Vogelmann, 1977).
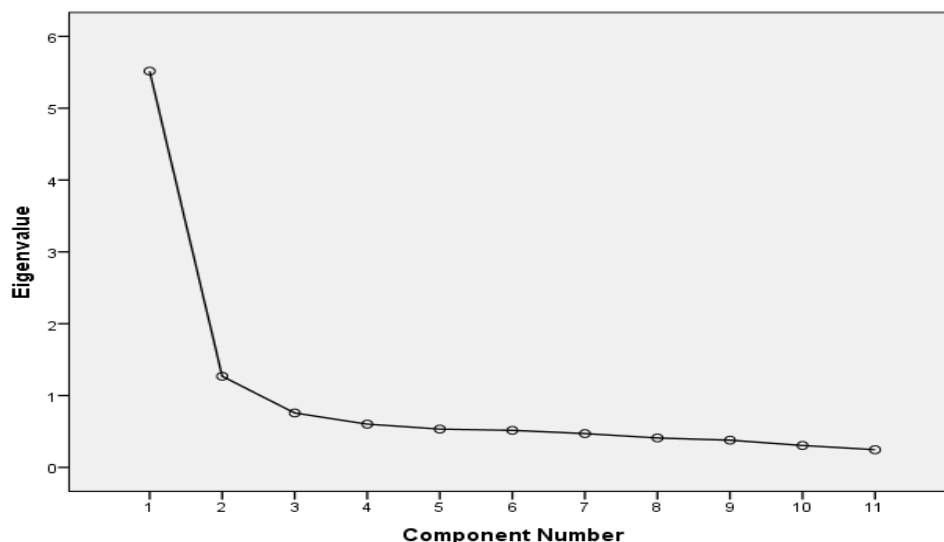

Figure 2:   Scree plot location and design

To aid in the interpretation and scientific utility of these two components, Varimax rotation was performed. Orthogonal rotation was chosen, since the analytical procedures are better developed than those of oblique rotation. Varimax was specifically chosen since it provides a clearer separation of factors (Hair, Black, Babin, Anderson & Tatham, 2006).

Table 3: Rotated factor matrix for customer satisfaction

Rotated factor matrix: PCA with varimax rotation (Kaiser Normalization)	Component	
	1	2
Restaurant linen (quality and cleanliness)	.784	
Table appointments / cutlery, crockery etc. (style and quality)	.774	
Restaurant furnishings and equipment (quality and condition)	.766	
Restaurant temperature (comfortable in all areas)	.758	
Restaurant toilets (attractive appearance, quality and cleanliness)	.716	
Restaurant lighting (low dim)	.710	
Restaurant ambience (ethnic, regional / country style)	.663	
Menu and wine list (theme and appearance)	.662	
Restaurant access (adequate road network)		.835
Restaurant location (proximity to customers)		.787
Restaurant parking (sufficient, secure and demarcated)		.776

The rotated solution revealed the presence of a simple structure (Thurstone, 1935) with each of the two components demonstrating a number of strong loadings (loadings below 0.4 were excluded from the solution) (Table 3). Each of the two extracted components demonstrated acceptable internal consistency as illustrated by Cronbach's Alpha coefficients listed in Table 4. The generally agreed-upon lower limit for Cronbach's Alpha is 0.70, although this may decrease to 0.60 in exploratory research (Hair *et al.*, 2006).

Subscales for the two extracted components were obtained by calculating the mean scores of the item loading on each of the subscales. For the first factor, the mean calculation was done only if at least six of the eight items had valid values, and for the second factor, the mean calculation was done only if all three items had valid values. This meant two latent factors were calculated resulting in Component 1: *Internal ambience and appearance* and Component 2: *Accessibility and parking facilities*, with each factor demonstrating acceptable internal consistency as illustrated by the Cronbach's Alpha coefficients listed in Table 4.

Table 4: Reliability statistics - six extracted factors.

Subscale	Description	N of Items	Cronbach's Alpha	Cumulative %
C1	Internal ambience and appearance	8	0.898	40.296
C2	Accessibility and parking facilities	3	0.779	61.671
Overall	**All dimensions**	**11**	**0.898**	

DESCRIPTIVE STATISTICS FOR THE FACTORS

Table 5 reflects the descriptive statistics for the two extracted factors, as well as for the remaining two single items.

Table 5: Descriptive statistics - two extracted factors

Descriptive statistics	N	Minimum	Maximum	Mean	Std. Deviation
Internal ambience and appearance	303	1	4	3.2182	.62166
Accessibility and parking facilities	303	1	4	3.2607	.72727
Customer Satisfaction: Restaurant building (modern building)	303	1	4	2.6403	.95562
Customer Satisfaction: Restaurant layout allows for privacy / intimacy (partitions)	303	1	4	2.6766	.92840
Valid N (list wise)	303				

A high mean score for a factor corresponds to, on average, a respondent's perception of high influencing value regarding the location and design aspects at a restaurant. On a scale of 1 to 4, a mean value above 2.5 is considered to be large (Figure 3).
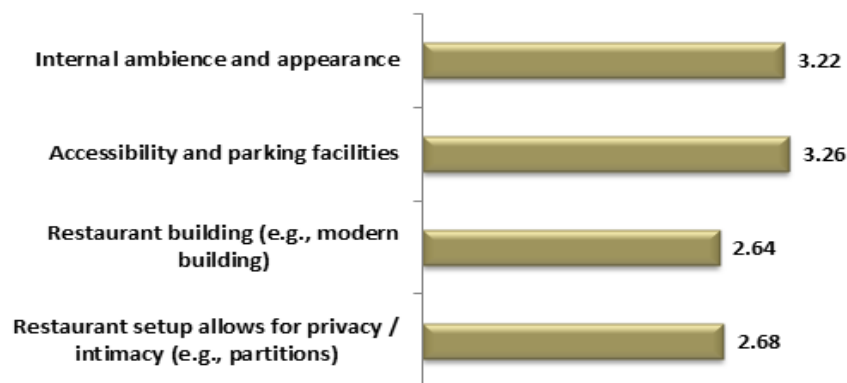

Figure 3: Mean influencing value for location and design

PEARSON CORRELATION AMONG THE FACTORS

The following correlations (over 0.3) were identified in Table 6 for accessibility and parking facilities, internal ambience and appearance, as well as restaurant furnishings and equipment, and layout allows for privacy.

In support of these results, direct positive correlations among tangibles (clean dining-room, ample parking, seating availability) food

quality and customer satisfaction have been identified in other studies (Qin *et al.*, 2010)
.

Table 6: Pearson correlation on location and design factors

	Restaurant ambience and appearance	Access and parking facilities	Restaurant building	Restaurant furnishings and equipment
Internal ambience and appearance	1	*		
Accessibility and parking facilities	.542**	1	*	
Restaurant building (modern building)	.294**	.212**	1	*
Restaurant setup allows for privacy / intimacy (partitions)	.379**	.184**	.197**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations among design, ambience, layout and customer satisfaction have been reported by Wang and Chen (2012). Various researchers have described correlations among price, location, facilities, equipment, physical environment and perceptions of quality (Barber & Scarcelli, 2010; Hyun, 2010).

DISCUSSION

Results show that all the quality dimensions received an average mean score of above 2 (the mid-value for a four-point scale). This indicates that most respondents either agreed or strongly agreed that the following location and design dimensions of quality are important. The dimensions that fell in the strongly-agree category, listed from highest mean score to lowest, are:

- Location and design;
  - Clean restaurant toilets, ambience, access, menu and wine list, linen, location, parking, temperature, lighting, table appointments as well as furnishings and equipment.

The dimensions that fell into the agree category, listed from highest mean score to lowest, are:

- Location and design;
  - Restaurant layout and building.

Exploratory analysis revealed two components. Component 1 comprised internal ambience and appearance and component 2, accessibility and facilities. The dimensions included under internal ambience and appearance are; linen, table appointments, furnishings and equipment, temperature, toilets, lighting, ambience and neatness of menu and wine list. Dimensions related to accessibility and facilities are; access, location and parking.

Correlations were identified among the following: accessibility and parking facilities; internal ambience and appearance; as well as restaurant furnishings and equipment; and, layout allows for privacy.

CONCLUSIONS

The study reported on in this paper represents an attempt to describe the perceptions of the location and design quality dimensions of independent full-service restaurateurs based on results of empirical research. This study will contribute to available literature on quality management in the South African independent full-service restaurant sector. Most importantly, the results of this study could be used as motivation for developing a quality-measuring scale regarding location

and design for independent full-service restaurants in South Africa. These findings also have management implications, because currently restaurateurs tend to focus their marketing message on food quality and price. This study indicates that location and design dimensions contribute substantially to the dining experience therefore restaurateurs should communicate this information to prospective patrons.

References

Abukhalifeh, A. A. N. & Som, A. P. M. 2012. Service quality management in the hotel industry: a conceptual framework for food and beverage departments. *International Journal of Business and Management,* 7(14):135-141.

Allen, I. E. & Seaman, C. A. 2007. Likert scales and data analyses. *Quality Progress,* 40(7):64-65.

Alonso, A. D. & O'Neill, M. A. 2010. To what extent do restaurant kitchens influence consumers' eating-out experience? *Journal of Retail & Leisure Property,* 9(3):231-246.

Bahla, K. & Nantel, J. 2000. A reliable and valid measurement scale for the perceived service quality of banks. *International Journal of Bank Marketing,* 18(2):84-91.

Barber, N., Goodman, R. J. & Goh, B. K. 2010. Restaurant consumer repeat patronage: a service quality concern. *International Journal of Hospitality Management,* 30:329-336.

Barber, N. & Scarcelli, J. M. 2010. Enhancing the assessment of tangible service quality through the creation of a cleanliness measurement scale. *Managing Service Quality,* 20(1):70-88.

Bartlett, M. S. 1954. A note on the multiplying factors for various "x"2 approximations. *Journal of the Royal Statistical Society, Series B, Methodological,* 16(2):296-298.

Brad, M. K., Cronin, J. J. & Brand, R. R. 2002. Performance-only measurement of service quality: a replication and extension. *Journal of Business Research,* 55(1):17-31.

Cadotte, E. R. & Turgeon, N. 1988. Key factors in guest satisfaction. *Cornell Hospitality Quarterly,* 28(4):45-51.

Catell, R. B. & Vogelmann, S. 1977. *A comprehensive trial of the scree and KG criteria for determining the number of factors* [Online]. Available from: http://search.proquest.com/docview/63861337?accountid=14717 [Accessed: 04/04/14].

Chowdhary, N. & Prakash, M. 2007. Prioritizing service quality dimensions. *Managing Service Quality,* 17(5):493-509.

Coldwell, D. & Herbst, F. 2004. *Business research*. Lansdowne: Juta.

Crick, A. P. & Spencer, A. 2011. Hospitality quality: new directions and challenges. *Contemporary hospitality management,* 23(4):463-476.

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.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. 2006. *Multivariate data analysis*. 6th ed. New Jersey: Prentice Hall.

Hsu, P. 2009. Applying the ANP model for selecting the optimal location for an international business office center in China. *Asia Pacific Journal of Management & Entrepreneurship Research,* 15(1):14.

Hyun, S. S. 2010. Predictors of relationship quality and loyalty in the chain restaurant industry. *Cornell Hospitality Quarterly,* 51(2):251-267.

Ingram, I. 1996. Classification and grading of smaller hotels, guesthouses and bed and breakfast accommodation. *International Journal of Contemporary Hospitality Management,* 8(5):30-34.

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

Markovic, S., Raspor, S. & Dorcic, J. 2011. What are the key dimensions of restaurant service quality? An empirical study in the city restaurant settings. *Sustainable Tourism*:235-249.

Mouton, J. 2005. *How to succeed in your masters' and doctoral studies.* Pretoria: Van Schaik

Mouton, J. 2012. *Understanding social research.* Pretoria: Van Schaik.

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

Ryu, K. & Jang, S. 2008. DINESCAPE: a scale for customers' perception on dining environments. *Journal of Foodservice Business Research,* 11(1):20-22.

Ryu, K., Lee, H. & Kim, W. G. 2012. The influence of the quality of the physical environment, food and service on restaurant image, customer-perceived value, customer satisfaction and behavioural intentions. *International Journal of Contemporary Hospitality Management,* 24(2):200-223.

Thurstone, L. L. 1935. *The vectors of mind: multiple-factor analysis for the isolation of primary traits.* Chicago, University of Chicago Press.

Wang, C. H. & Chen, S. C. 2012. The relationship of full-service restaurant attributes, evaluative factors and behavioural intention. *International journal of organizational innovation,* 5(2):248-262.

Yuncu, H. R., Oktay, E. & Yalcin, A. 2013. A study on determining the factors that influence the customer value in the fast casual restaurants. *International Journal of Business and Social Science,* 4(3):142-168.