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Relationships among Service Quality, Customer Satisfaction and Customer Loyalty in Chain Restaurant

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Abstract: Chain restaurant is one of the fastest growing restaurants in the food service industry. In America, Service industry contributes about 60% of the annual GDP and 70% of new jobs. According to the statistics of Executive Yuan of Taiwan, the service industry contributes over 70% of the annual GDP in 2008. The ultimate goal for companies is to build customer loyalty. With loyal customers, companies can reduce the operating cost and acquisition expenses. An improvement of 5 percent in customer retention leads to an increase of 25 percent to 75 percent in profit. It costs more than five times as much to obtain a new customer than to keep an existing one. This initial study was from relevant literature, then set up research structure and hypotheses. Survey was employed, and respondents were from the customers of Taoban in Taiwan. There were 182 usable questionnaires to analyze descriptive statistics, reliability, validity, and SEM model. The research found that service quality significantly affects customer satisfaction, and customer satisfaction has strong impact on customer loyalty for the sample. Therefore, firms have to specifically focus on these factors in order to build a long-term and mutually profitability relationship with a customer and create loyalty as competitive advantages in the market.

Keywords: *service quality, satisfaction, loyalty, SEM*

1. Introduction

Chain restaurant, such as Pizza Hut, Sizzler and Subway, is one of the fastest growing restaurants in the food service industry (Roh, 2002). Mckee (2008) indicated that the service industry contributes about 60% of the annual GDP and 70% of new jobs in America. According to the statistics of Executive Yuan of Taiwan, the service industry contributes over 70% of the annual GDP in 2008. The service industry has become more and more important for business activities. There are many researchers who have studied service quality and tried to examine the factors which affect customer satisfaction and loyalty in various industries to increase performance of the service industry (Parasuraman, Zeithaml & Berry, 1988; Davis, 1999; Santos, 2003).

The ultimate goal for companies is to build customer loyalty (Eakuru & Mat, 2008; Oliver, 1997). Polyorat and Sophonsiri (2010) indicated that customer loyalty is an important factor of growth for chain restaurants. With loyal customers, companies can reduce the operating cost and acquisition expenses. Reichheld and Sasser (1990) indicated that an improvement of 5 percent in customer retention leads to an increase of 25 percent to 75 percent in profit. Wills (2009) reported that it costs more than five times as much to obtain a new customer than to keep an existing one. Moreover, with loyal customers, for example, companies can increase their revenue. First, loyal customers are less price sensitive. Second, loyal customers are willing to purchase frequently, try the firms' other products or services, and spread more positive word-of-mouth and bring new customers to the firms (Reichheld & Sasser, 1990).

Companies provide superior service quality that also has a more satisfied customer base (Gilbert & Veloutsou, 2006). Customer satisfaction is an important driver to customer loyalty and the success of businesses (Oliver, 1997). Studies have found positive evidence on the direct relationship between customer satisfaction and loyalty of repeat purchase, less price sensitive, cross-buying behavior, and profit (Bloemer & Odekerken-Schroder, 2002; Ibrahim & Najjar, 2008; Oliver, 1997). However, several studies (Dimitriades, 2006; Jones, 1996; Woodruff, 1997) show that satisfied customers do defect. For example, when customers say they are satisfied, they still purchase elsewhere (Jones, 1996). Marketing exists to deliver more value to satisfy customers as well as build a long-term and mutually profitability relationship with customer (Kotler, 2005). If a firm's products or services do not meet the customer's

needs and wants, all the strategies are insufficient. Thus, the purpose of this study is to explore the influences of service quality and customer satisfaction on customer loyalty.

2. Literature Review

Service quality: Taylor and Baker (1994) pointed out that the changing of business paradigm has made the service quality as top priority. Customers' evaluations of the service quality are critical to companies that aim to improve their marketing strategies (Jain & Gupta, 2004). Boshoff and Gray (2004) indicated that attention to service quality can make a company different from other companies and gain competitive advantages. According to Polyorat and Sophonsiri 2010, service quality is a significant factor to distinguish itself from other competitors, and provide a high level of service quality has become an important goal for chain restaurant owners. Polyorat and Sophonsiri (2010) reported that chain restaurants treat for customers who are willing to pay more for a better service and, they offer a cleaner environment or a better service in Thailand (Murase & Bojanic 2004). Khan (2010) indicated that measurement of service quality enables organizations to realize their position in the markets and provides a strategic advantage to enhance its competitiveness.

Parasaraman *et al*. (1988) defined that service quality is the difference between customers' expectations of provided service performance and their evaluation of actual service. Dehghan (2006) pointed out to the service quality as the objective comparison carried out by customers between service quality and actual service that they receive. Lovelock and Wirtz (2004) reported that service quality have various concepts and meanings according to customers difference, and way through which they realize service quality provided to them. In particular, consumers prefer service quality when the price and other cost elements are constant (Turban, 2002). One of the most popular models, SERVQUAL, used in service researches, was developed by Parasuraman, Zeithaml & Berry (1985, 1988). There are 10 dimensions of service quality originally, and later these were reduced to five including reliability, tangibles, responsiveness, assurance and empathy.

Customer satisfaction: Satisfaction can be separated into two approaches either as a transaction-specific satisfaction (Olsen & Johnson, 2003) or as a cumulative satisfaction/ post-consumption satisfaction (Oliver, 1997). After 1990s, many researchers view satisfaction as customers' cumulative, after purchase, and overall judgment about purchasing behavior (Johnson, Anderson, & Fornell, 1995; Engel & Blackwell, 1982; Hunt, 1977; Oliver, 1997; Tse & Wilton, 1988). According to Oliver (1997), satisfaction is defined from the mixture of both affection (emotion) and cognition approach as "the consumer's fulfillment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under- or over-fulfillment" (Oliver, 1997, p. 13).

Previous studying suggests that service quality is an important indicator of customer satisfaction (Spreng & Machoy, 1996). Customer satisfaction is viewed as influencing repurchase intentions and behavior, which, in turn, leads to an organization's future revenue and profits. According to Zhang, Ye, Law and Li (2010), word-of-mouth has a great impact on the popularity of restaurants. However, Bowen and Shoemaker (2003) stated that satisfied customers may not return to the firm and spread positive word-of-mouth communications to others. One of the reasons is that the firm does not deliver what customers need or want (Roig, Garcia, Tena & Monzonis, 2006).

Customer loyalty: Customer loyalty can be classified as brand loyalty, service loyalty, and store loyalty (Dick & Basu, 1994). Customer loyalty is a strategy that creates mutual rewards to benefit firms and customers (Reichheld & Detrick, 2003). One benefit is that firms can increase the revenue. With loyal customers, companies can maximize their profit because loyal customers are willing to (1) purchase more frequently; (2) spend money on trying new products or services; (3) recommend products and services to others; and (4) give companies sincere suggestions (Reichheld & Sasser, 1990). Reichheld and Teal (1996) further indicate that customer loyalty provides a foundation for a firm to examine their marketing strategy, relationship quality improvement activities, and value creation program. Thus, loyalty links the success and profitability of a firm (Eakuru & Mat, 2008).

Customer loyalty is commonly distinguished in three approaches including behavioral loyalty approach (Grahn, 1969); attitudinal loyalty approach (Bennett & Rundle-Thiele, 2002; Jacoby, 1971; Jacoby & Chestnut, 1978), and integration of attitudinal and behavioral loyalty approach (Dick & Basu, 1994; Jacoby, 1971; Jacoby & Chestnut, 1978; Oliver, 1997). The attitudinal loyalty helps to examine the factors of loyalty, to avoid switching behavior (Caceres & Paparoidamis, 2007), and to predict how long customers will remain loyal (Jacoby & Chestnut, 1978). Therefore, viewing loyalty as an attitude-behavior relationship allows integrated investigation of antecedents and consequences of customer loyalty (Dick & Basu, 1994).

3. Methodology

A quantitative, non-experimental, exploratory (comparative) and explanatory (correlational) study was conducted to assess the relationships among service quality, and customer satisfaction on customer loyalty. The theoretical propositions inform the development of following hypothesized model and research hypotheses.

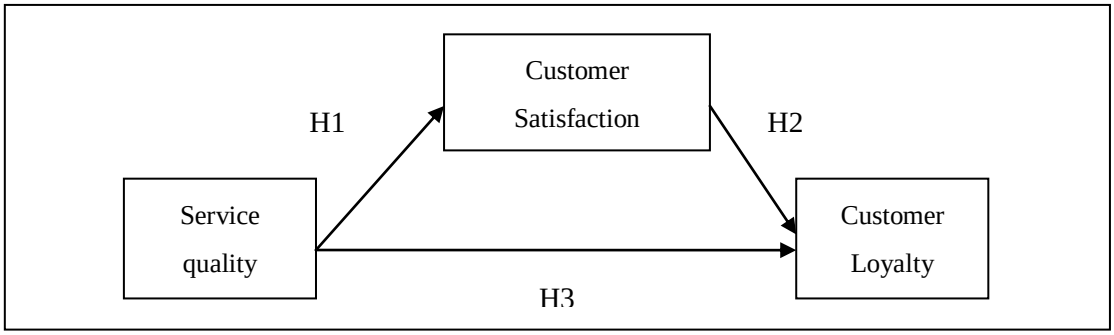


Figure 1: Hypothesized Model

Research hypotheses:

H1: The service quality is a direct path and factor that significantly affects the customer satisfaction.
H2: The customer satisfaction is a direct path and factor that significantly affects the customer loyalty.
H3: The service quality is a direct path and factor that significantly affects the customer loyalty.

Instrumentation: A four-part questionnaire for the study was developed by the researchers in order to measure the research variables. In the questionnaire, five of the items were designed to examine service quality according to the theory of Parasaraman, Zeithmal and Berry in 1988; five of the items were designed to examine customer satisfaction according to the theory of Oliver in 1997; and five of the items were developed to test customer loyalty according to the theory of Reichheld and Sasser in 1990.

All variables are by means of a five-point Likert scale, and ranged from strongly agree (5) to strongly disagree (1). These socio-demographic questions and the coding schemes used included: Gender: 1 = male; 2 = female. Age: 1 = under 25; 2 = 25–35; 3 = 36–45; and 4 = over 46. Education: 1 = high school diploma or equivalent; 2 = associate degree; 3 = bachelor degree; and 4 = graduate degree.

Population: The survey was distributed to customers in a public area outside the main entrance of Taoban which is a famous chain restaurant during the weekday and weekend in Keelung, Taiwan. A random sampling plan was used to select participants. When customers agreed to participate, participants were given a survey questionnaire on a clip board, and retrieved the questionnaire after finished.

Methods of data analysis: Hair, Black, Babin, and Anderson (2010) indicated that structural equation modeling (SEM) has become a popular multivariate approach because it provides a means of assessing theories that is conceptually appealing. AMOS software (version 18.0), which includes an SEM package with maximum likelihood estimation, was used to test both the measurement and the structural models that related to the research hypotheses listed. The present research also made use of a number of criteria

to determine the inclusion of items and the goodness of fit of the model. Hair *et al*. (2010) suggested a six-stage procedure for employing SEM, which the research also followed here.

First, EFA was used to pretest the questionnaire in order to reduce the items to a manageable and meaningful set of factors, and the reliability of the internal consistency was measured using Cronbach's coefficient alpha. Results of the Kaiser–Meyer–Olkin (KMO) test and of Bartlett's test were obtained before performing the factor analyses. The KMO test indicated whether a sufficient number of items had been predicted by each construct, and Bartlett's test indicated whether the items were sufficiently highly correlated to provide a reasonable basis for factor analysis. Cronbach's coefficient alpha was used to analyze the variables related to the scales of each item, according to the average correlation of each item with every other item. Leech, Barrett and Morgan (2005) recommended that KMO values should be greater than 0.7, and Bartlett's test should be significant. A factor loading of 0.50 or above was considered to be of practical significance (Hair *et al*. 2010). The lower limit for Cronbach's coefficient alpha values was 0.7 (Leech, Barrett & Morgan 2005).

The validity of the construct was measured using the convergent and discriminant validity. The convergent validity was used to determine whether scale items converged on a single construct during measurement (Steenkamp & Van Trijp 1991). This was determined from the evaluation of the factor loadings (which must be at least 0.5), composite reliability (at least 0.6) and average extracted variance (at least 0.5) in the study (Hair *et al*. 2010; Fornell & Larcker 1981). The discriminant validity is the extent to which a construct is truly distinct and unique, and this measure captures phenomena that other measures do not (Hair *et al*. 2010).

Hair *et al*. (2010) indicated that the goodness-of-fit of the overall model is indicated by how well it reproduces the observed covariance matrix among the indicator items. It can be classified into the following four categories: Chi-square measures including chi-square, degree of freedom (df) and probability. Measures of absolute fit, including the goodness-of-fit index (GFI), root mean square error of approximation (RMSEA), root mean square residual (RMR), standardized root mean square residual (SRMR) and normed chi-square. Incremental fit measures including the normed fit index (NFI) and the comparative fit index (CFI). Parsimony fit measures including the adjusted goodness-of-fit index (AGFI) and the parsimony normed fit index (PNFI).

Chi-square (χ^2) is a basic measurement of the differences between the observed and estimated covariance matrices (Hair *et al*. 2010). A smaller value of χ^2 is more desirable in that it supports the proposed theoretical model, but values of χ^2 also increase as the sample size increases. The p-value should be large and not statistically significant ($p > 0.05$) between the two matrices (Jöreskog & Sörbom 1992).

GFI was an early attempt to produce a fit statistic. The range of possible GFI values is between 0 and 1, and if the value is 0.90 or higher the fit is considered to be good (Hair *et al*. 2010); however, MacCallum and Hong (1997) suggested that the GFI value could decrease to 0.80 in usage. RMSEA tries to correct for both the sample size and complexity of the model by including each in its computation. Steiger (1990) suggested that RMSEA values below 0.10 indicate a good fit, but Hair *et al*. (2010) and Browne and Cudeck (1993) argued that the value of RMSEA should be 0.08 or less. Hair *et al*. (2010) indicated that RMR is problematic because it is related to the scale of the covariances. An alternative statistic is SRMR, which is useful for comparing the fit across models. Jöreskog and Sörbom (1992) indicated that an acceptable SRMR value would be 0.05 or less. The normed chi-square is given by $\chi 2/df$, and its value should be 3 or less to indicate a better fit between the observed and modeled values (Hair *et al*. 2010).

NFI is the ratio of the difference in the value of χ^2 between the fitted and null models, divided by the value of χ^2 for the null model (NFI = 1 is a perfect model; Hair *et al*. 2010). Bentler (1992) suggested that the value of NFI should be 0.90 or above. CFI is an improved version of NFI. It ranges between 0 and 1, with values above 0.90 being associated with a good fit (Hair *et al*. 2010; Gerbing & Anderson 1992).

AGFI takes into account different degrees of complexity in the model, and its value is usually lower than that of the GFI in complex models (Hair *et al*. 2010). MacCallum and Hong (1997) recommended that the value of AGFI should be 0.80 or higher to indicate a good fit. The PNFI adjusts the NFI by multiplying it by

the parsimony ratio; high values represent a better fit (Hair *et al*. 2010). Wu (2009) indicated that the value of the PNFI should be 0.50 or above to indicate a good fit.

4. Results

There were 190 questionnaires returned, but 8 questionnaires were incomplete or invalid. All questionnaires were coded for statistical analysis using the SPSS 14.0. From the 182 respondents, in total, 62 (34.1%) respondents were male and 120 (65.9%) were female. 106 (58.2%) of the respondents were under 25 years old, 48 (26.4%) were between 26 and 35, 22 (12.1%) were between 36 and 45 and 6 (3.3%) were older than 46. In the study, 7 (3.8%) respondents had a high school diploma or equivalent, 78 (42.9%) held an associate degree, 93 (51.1%) held a bachelor's degree and 4 (2.2%) had a graduate degree.

The three dimensions and 15 items were evaluated by EFA. For the first-time EFA, all items of the factor loadings less than .40 or greater than .95 were deleted. For the second-time EFA, the KMO value of the variables used in the study was .84, indicating that the data from the results were sufficiently robust to allow EFA. The values of Bartlett's test were $\chi^2 = 920.74$, df = 55 and p = .000, which implies that all the items in this study were sufficient for research in social science and for factor analysis. The extraction and rotation sums of the squared loading of the total variance explained were 69.84%. Three items remained for each dimension which could therefore now be applied. The three dimensions of Cronbach's coefficient alpha were between .81 and .87, which surpassed the criteria and indicated an internal reliability of the consistency of the instruments used in the present study that was appropriate for research in social science. As a result of EFA, 3 items were derived to identify the service quality and customer satisfaction, and 5 items were therefore derived to identify the customer loyalty.

The univariate normality of the skewness and kurtosis values and the multivariate normality were used to assess the normality. The most commonly used critical values of univariate normality are ±3 and ±10 (Kline, 1998). In the study, all the values of skewness were between -.51 and 1.05, and the values of peakedness lay between -.004 and –1.27. The observed variables all had univariate normal distributions. The value of Mardia statistic is for multinormality measurement, and it is constructed a test based on skewness and kurtosis. Bollen (1989) indicated that if the value of Mardia is smaller than p(p+2), p indicating the amount of observed variables, all dimensions are multinormality. In the study, the value of Mardia is 16.57, smaller than 11(11+2), indicating multivariate normality distribution.

In the structural models, all the factor loading estimates were higher than .62, all the composite reliability (CR) values ranged from .82 to .87, and all the extracted average values of variance lay between .51 and .69. This evidence supports the convergent validity of the measurement model, as shown in Tables 1.

Table 1: Standardized factor loadings, composite reliability and average variance extracted values for the structural model

Construct	Indicator	Standardized Factor Loading	CR	AVE
Service Quality	SQ 1	.65	.82	.61
	SQ 2	.84		
	SQ 3	.84		
Customer Satisfaction	CS 1	.83	.87	.69
	CS 2	.84		
	CS 3	.82		
Customer Loyalty	CL 1	.81	.84	.51
	CL 2	.72		
	CL 3	.62		
Customer Loyalty	CL 4	.76		
	CL 5	.64		

A cross-validation strategy was used to assess the stability of the model. This involved the random splitting of all samples into a calibration sample and a validation sample. There are three ways to assess

cross-validity, namely loose, moderate and tight replication strategies (MacCallum, Roznowski, Mar and Reith, 1994). For the loose replication strategy, the value of assuming model unconstrained to be correct of χ^2 was 8.81, and the *p*-value associated with this result was .36. For the moderate replication strategy, the value of assuming model measurement weights to be correct of χ^2 was 1.18, and the *p*-value associated with this result was .76. For the tight replication strategy, the value of assuming model structural covariances to be correct of χ^2 was 3.34, and the *p*-value associated with this result was .19. All the *p*-values showed no significant differences between the two split samples, which led to the measurement invariance.

Bagozzi and Phillips (1982) stated that metrics support discriminant validity if the upper and lower limits of the computed confidence interval did not include the number 1. In the present research, a model was constructed for each of the 3 paired correlations of the latent variables. Then, the correlation was set between the two constructs to 1, and a 95 percent confidence interval was applied in order to apply a bootstrap. As the results, all values of paired correlations of the latent variables were from .21 to .60, the number 1 is not included with the upper and lower limits of the confidence interval, which indicates discriminant validity among the theoretical constructs.

The results of the SEM model shown in Figure 2 were obtained using AMOS 18.0, and the model fits are reported in Table 2. The overall model fit χ^2 was 136.83 with 93 degrees of freedom. The p-value associated with this result was .002. The *p*-value was significant using a type I error rate of .05; thus, the χ^2 goodness-of-fit statistic does not indicate that the observed covariance matrix matches the estimated covariance matrix within the sampling variance. According to previous research, a number of indices are available to evaluate model fits (Bentler, 1990, 1992; Fornell and Larcker, 1981; Jöreskog and Sörbom, 1992), but no single index or standard is generally agreed; hence, multiple criteria should be used to evaluate the overall fit of the theoretical model (Hair *et al.,* 2010; Bagozzi and Yi, 1988). The value of RMSEA, an absolute fit index, was .05. This value is smaller than the guideline value of .08 for a model with 11 measured variables and a sample size of 182. Therefore, RMSEA supports the model fit. The value of GFI (.89) was slight lower than the guideline value .90. RMR had a value .03. SRMR (.06) was slightly higher than .05. The normed χ^2 was 1.47. This measure is the chi-square value divided by the number of degrees of freedom. A number smaller than 3.0 is considered to be very good. Thus, the normed χ^2 suggests an acceptable fit for the structural model.

In the SEM model, the CFI had a value of .95, which exceeds the CFI guidelines for a model of this complexity and sample size. The other incremental fit indices (NFI = .87) was smaller than the suggested cutoff values of .90. The parsimony index of AGFI had a value of .84 and the PNFI was .73. Both indices were considered to represent a good model fit, given the acceptable critical value. The overall structural fit results of these analyses showed that the model provides a reasonable fit.

Table 2: Comparisons of goodness-of-fit indices of SEM models

GOT Indices	Criterion Guidelines	SEM Results
Chi-square (χ^2)		
Chi-square		136.83
Degree of freedom		93
Probability	p **>** .05 (Jöreskog & Sörbom, 1992)	.002
Absolute fit measures		
GFI	**>** .90 (Hair *et al*., 2010)	.89
RMSEA	**<** .08 (Browne & Cudeck, 1993)	.05
RMR	**<** .05 (Wu, 2009)	.03
SRMR	**<** .05 (Jöreskog & Sörbom, 1992)	.06
Normed chi-square	**<** 3 (Hair *et al*., 2010)	1.47
Incremental fit measures		
NFI	**>** .90 (Bentler, 1992)	.87
CFI	**>** .90 (Gerbing & Anderson, 1992)	.95

Parsimony fit measurement		
AGFI	> .80 (MacCallum & Hong, 1997)	.84
PNFI	> .50 (Wu, 2009)	.73

For H1, The value of the standardized parameter estimates was .73. The standard error was .12, and the t-value was significant (p = 6.28***). For H2, The value of the standardized parameter estimates was .40. The standard error was .15, and the t-value was significant (p = .2.08*). For H3, The value of the standardized parameter estimates was .12. The standard error was .64, and the t-value was not significant (p = .52).

Table 3: Standardized parameter estimates for the structural model

Hypotheses	Estimates	S. E.	t-value	P
H1	.73	.12	6.28	***
H2	.40	.15	2.08	*
H3	.12	.15	.64	.52

* p< .05. ** p< .01. *** p< .001.

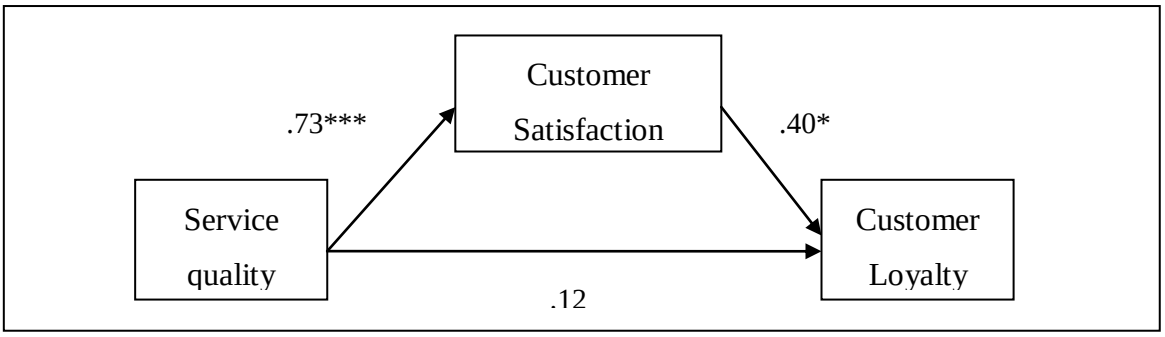


Figure 2: SEM Model

5. Conclusion

The results of this study show that the service quality is a direct path and is a factor that significantly affects the customer satisfaction. The finding supports H1, and the result is consistent with the findings of Cronin and Taylor (1992); Jun, Yang and Kim (2004); and Szymanski and Hise (2000). For hypothesis 2, the results indicate that the customer satisfaction is a direct path and is a factor that significantly affects the customer loyalty. Therefore, this hypothesis is supported, and the result is consistent with the findings of Eakuru and Mat (2008). The results indicate that the service quality is not a direct path and is not a factor that significantly affects the customer loyalty. Therefore, this hypothesis 3 is not supported, and the result is consistent with the findings of Cronin and Taylor (1992) and Parasuraman, Berry & Zeithaml (1991).

Based on the research results, service quality significantly affects customer satisfaction, and customer satisfaction has impact on customer loyalty for the sample. Therefore, firms have to specifically focus on these factors in order to build a long-term and mutually profitability relationship with a customer and create loyalty as competitive advantages in the market. From the respondents, Taoban should also pay more attention to male, elder customers, and consumers who have graduate degrees for increasing market share. The study focuses on chain restaurants in Keelung, Taiwan, and adopts only a quantitative research method. Although the SEM provides a good fit to the hypothesized model, future research could use a different design, such as in-depth interviews to examine the causal relationships posited by the theories, such as marketing mix (4Ps) and relationship quality, and should be conducted in different types of restaurant and other Asian countries or different global regions.

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