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Are Physical Environments, Service Quality, and Menu in Coffee Shop influencing Overall Satisfaction of College Students?

Hyojin Kim¶

Dept. of Hotel & Tourism, Daegu University, Gyeongsan 712-714, Korea

ABSTRACT: The purpose of this study is to investigate if the three selected constructs that constitutes physical environments, service quality, and importance of menu affect college student satisfaction and the number of visit to coffee shop, respectively. Frequency, reliability, factor, and multiple regression analysis were employed for the study. Most of the created variables related to physical environments, service quality, and importance of menu were found to be significant relationships with overall satisfaction and the number of visit to coffee shop. Limitations of the study and assignments for future research were discussed.

Keywords: Coffee Shop, Physical Environment, Service Quality, Menu, Satisfaction

INTRODUCTION

Since the first entry of Starbucks to Korean coffee market in 1999, not only other international coffee shop brands such as Pascucci and Coffee Bean, but also a variety of domestic coffee stores such as Caffé bene and Angel-in-us surged into the home coffee industry (Kim *et al*., 2007; Yoon *et al*., 2012). The growing popularity of coffee product was evidenced by the number of more than 100 different domestic coffee franchises in the country (Cho, 2013). Moreover, given a large number of Korean dessert stores selling coffee other than coffee shops, it is not overstating that the coffee industry made a rush and punched the Korean franchise market (Um, 2010). As a great number of coffee shops continue to increase, even finding a coffee shop in the rural areas in the country is not challenging. In addition, meeting or studying in coffee shop, as a form of modern culture, appears to be a daily routine. Some scholars argue that enjoying coffee is not for a particular class at all, but is everyday life and popular culture for a classless group (Kim *et al*., 2011; Noh & Jang, 2011).

The recent years saw a continuation in the upward trend in sales from coffee shops. Together with the wine consumption industry, the coffee industry recorded average annual sales growth of more than 20 percent in the country over the past few years (Kim *et al*., 2007). As of 2010, the South Korea became the world's 11th largest coffee consumption country, based on that the per capita coffee consumption for the year was about 300 cups of coffee (Um, 2010; Kim & Choi, 2011). Also, a large deal of coffee beans with 80,000 tons was imported to the country due to several reasons such as considerable demand of coffee and disadvantageous climate and soil to produce coffee beans (Um, 2010). Although recently Caffé bene was ranked number one in the country in terms of the number of coffee store, experts in the Korean coffee market anticipate that the coffee industry remains quite competitive and immature for a decade (Yu & Yoon, 2011). At $6 billion (6 trillion Korean won, one thousand one per a U.S. dollar) or more in 2013, it was the breadth of the Korean coffee market (Cho, 2013).

Despite the facts that the domestic coffee market shows a steeper incline and a constant coffee consumption in recent years, little research for a major group of college students have been paid attention to researchers. In particular, unlike extant literature stressing customer loyalty, attribute of coffee shop selection, and brand personality and identity, the focus of the study is on physical environments, service quality, importance of menu, and satisfaction in coffee shop plus the number of visit to coffee shop. Therefore, this study aims to identify whether or not the three selected constructs that constitutes physical environments, service quality, and importance of menu affect college student satisfaction and the number of visit to coffee shop, respectively.

LITERATURE REVIEW

As the coffee industry that is not considered minor business, but that takes major field for granted is promising and plays a key role in the hospitality industry, necessity of studies on the coffee industry came to the fore. In particular, with a research subject of coffee shop many studies were lately published in academic journals. Inter alia, some research in the relationships with selection attribute of coffee shop are remarkable. While in Kim *et al*.'s (2007) study it was determined whether selected choice attributes impact on the customer loyalty in coffee shop, Cho (2013) examined if the attributes significantly predict customer satisfaction as well as loyalty. Furthermore, Oh and Chung (2013) attempted to find the

§ Corresponding Author: Hyojin Kim, Ph.D., Dept. of Hotel & Tourism, Daegu University, Jillyang, Gyeongsan 712-714, Gyeongbuk, South Korea, Tel. +82-53-850-6143, Fax. +82-53-850-6149, E-mail: hyojin1126@hotmail.com
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effects of discrepancies between importance and performance of coffee shop selection attribution on consumer behavior, using Importance-Performance analysis.

In the meantime, other than attributes of coffee shop selection, a few interesting issues pertaining to servicescape (Um, 2010), cultural marketing (Kim & Kim, 2010; Noh & Jang, 2011), market segmentation (Lee *et al.*, 2012; Yu & Yoon, 2011), customer satisfaction (Jung, 2006), brand personality and loyalty (Kim & Choi, 2011; Kim *et al.*, 2011), and service quality (Kim & Byun, 2010) began to emerge. However, a study on the relationships among physical environment, service quality, menu, customer satisfaction, and the number of visit to coffee shop has little been conducted.

To investigate their relationships, this study created the six following hypotheses.

Hypothesis 1: Physical environments in coffee shop will positively influence customer satisfaction.
Hypothesis 2: Service quality will positively influence customer satisfaction.
Hypothesis 3: Importance of menu will positively influence customer satisfaction.
Hypothesis 4: Physical environments in coffee shop will positively influence a number of visitation to coffee shop.
Hypothesis 5: Service quality will positively influence a number of visitation to coffee shop.
Hypothesis 6: Importance of menu will positively influence a number of visitation to coffee shop.

METHODS

Instrument and Sampling

A developed questionnaire consisted of six sections: 1) 20 items on Physical environments from both references and panel discussion (Baker, 1986; Ha & Jang, 2010; Lee & Ko, 2010), 2) 12 items on service quality from literature review (Ha & Jang, 2010; Kim *et al.*, 2009; Stevens *et al.*, 1995), 3) 8 items on importance of menu introduced by related references (Kim & Lee, 2009; Lee & Ko, 2010; Park & Yoon, 2006), 4) 1 item on overall customer satisfaction, 5) a number of visit to coffee shop per month, and 6) demographic characteristics. A seven point Likert scale from strongly disagree to strongly agree was adopted for all items based on literature review and discussion among professionals pertaining to the coffee industry. Because the study was considered exploratory research, convenient sampling method that equally distributed each of 200 survey questionnaires to four different colleges in South Korea was utilized for data collection. A self-administered questionnaire survey method was used for four months from the beginning of March to the end of June, 2014. Of the 800 total questionnaires, 789 was returned with a response rate of 98.6% and used for the study.

Analytical Methods

This study employed the four following statistical methods with SPSS version 20.0 program: frequency, reliability, factor, and multiple regression analysis. First, frequency analysis was run to screen the fundamental statistical assumptions that address absence of missing value, kurtosis, and skewness relating to normality. Second, Cronbach's α was undertaken to estimate each of the internal reliabilities for physical environments, service quality, and importance of menu. Third, factor analysis with a varimax method from orthogonal rotation was conducted to test validity of measurement instrument for each construct. Finally, with newly variables created from factor analysis, standard multiple regression was used to identify the relationships between independent variables that represent physical environments, service quality, and importance of menu, and dependent variables that describe the number of visitation to coffee shop and overall customer satisfaction.

RESULTS

Frequency and Reliability Analysis

After data screening, normality for each variable was identified. All variables complied with normal distribution as a statistical assumption. Two missing values from the two variables that explain "smell" and "noise" from physical environments were detected and deleted because they were assumed not to be significant impacts on the final result.

Cronbach's α was conducted to test each reliability and consistency of the following three constructs: physical environments of 20 items, service quality of 12 items, and importance of menu of 8 items. The values of Cronbach's α for each four construct presented 0.88, 0.89, and 0.77, respectively that addressed acceptable reliability.

Factor Analysis

For statistical assumptions of factor analysis, presence of outliers, absence of multicollinearity, and factorability of the correlation matrices were tested, and it turned out that the collected data did not violate the assumptions. Using varimax rotation, principal factors extraction was performed for all three constructs. The 20 variables pertaining to physical environments created five dimensions, which accounted for 66.21% of the variance. As seen in Table 1, the nine variables that represented "noise," "cha_table," "w_internet," "clear_table," "spaceBTT," "menu," "restroom," "tol_articles," and "indoorspace" were loaded on Factor 1, while Factor 2 contained "music," "light," "interior," and "color", Factor 3 "clear_S_P," "enough_S_space," and "variousservice", Factor 4 "temp" and "smell", and Factor 5 "floor" and "exterior."

For service quality, the 12 variables produced two separate factors, which explained 58.87% of the variance. From Table 2, it was found that Factor I loaded the nine variables: "ontimeservice," "comfort," "quickresponse," "serviceorder," "preciseorder," "cleanmanage," "cooperation," "sincereanswer," and "kindness," while the three variables that include "knowledge," "skill," and "regularpatron" were loaded on Factor 2. In the last, for importance of menu 8 variables were grouped into two individual factors accounting for 59.51% of the variance (see Table 3). Factor 1 presented "various coffee," "otherbever," "otherbeverfla," "sidemenu," and "sidemenufla, whereas Factor 2 was loaded on "flavor," "properamount," and "reasonablepri."

Standard Multiple Regression

Table 4 identifies whether each independent variable generated from three constructs influences overall customer satisfaction and

Table 1. Physical environments dimensions

Physical environments	Factors					Communality
	1	2	3	4	5	
Factor 1						
noise	0.471					0.682
cha_table	0.579					0.553
w_internet	0.524					0.474
clear_table	0.787					0.723
spaceBTT	0.791					0.673
menu	0.679					0.585
restroom	0.819					0.731
tol_articles	0.694					0.581
indoorspace	0.616					0.485
Factor 2						
music		0.810				0.691
light		0.798				0.752
interior		0.561				0.421
color		0.782				0.673
Factor 3						
clear_S_P			0.736			0.729
enough_S_space			0.873			0.827
variousservice			0.783			0.672
Factor 4						
temp				0.869		0.821
smell				0.728		0.768
Factor 5						
floor					0.609	0.662
exterior					0.814	0.738
Eigenvalue	6.39	2.87	1.76	1.16	1.07	
Variance (%)	31.96	14.35	8.78	5.78	5.36	
Cumulative variance (%)	31.96	46.29	55.07	60.85	66.21	
Cronbach's alpha	0.83	0.77	0.75	0.81	0.73	
Number of items (total=20)	9	4	3	2	2	

Note: 1) For this study, Kaiser-Meyer-Olkin (KMO) statistic was .853 (greater than .60) that indicated that the data were likely to factor well; Bartlett's test of Sphericity presented $p<.001$ indicating the correlation matrix is not an identity matrix, which is desirable for factor analysis.

2) cha_table denotes "The furniture is comfortable"; w_internet "High speed Internet service is provided"; clear_table "The chairs and tables are clean and stain-free"; spaceBTT "The space between tables is acceptable"; tol_articles "The restroom has adequate supplies"; indoorspace "The environment is appropriate for conducting business conversations"; clear_S_P "The coffee shop provides a clean order/pick-up/side counter"; enough_S_space "The coffee shop provides a side counter of suitable size"; variousservice "The coffee shop offers an acceptable variety of my personal preferences."

the number of coffee shop visit. From factor analysis, the five independent variables for physical environments, the two independent variables for service quality, and as well the two independent variables for importance of menu were created. For the generated variables, any of suppressor variables and outliers were not found based on a criterion of $p<.001$ for Mahalanobis distance. Other statistical assumptions such as normality, linearity, and homoscedasticity of residuals for multiple regression were inviolate.

Physical environment Factor 1, 2, and 5 were found to be significant predictors in overall customer satisfaction, which accounted for 77.5% of the variability in the dependent variable. Interestingly, while Physical environment Factor 1 and 2 were found to be positive relationships with overall customer satisfaction, Physical environment Factor 5 had the negative relationship with it. This implied that there were some physical variables in coffee shops to be paid attention. Hypothesis 1 thus that addresses "physical environments in coffee shop will positively influence customer satisfaction" resulted in partial acceptance. Service quality Factor 2 alone was a significant regressor to affect overall satisfaction, which explained 64.0% of the variance in satisfaction. From the result, it was concluded that Hypothesis 2 that indicates "Service quality will positively influence customer satisfaction" was partially accepted. Only menu Factor 2 also became a significant predictor of overall satisfaction, which accounted for 78.0% of the variance in satisfaction. Hypothesis 3 that presents "Importance of menu will positively influence customer satisfaction" thus proved to be partially acceptable.

In tests that investigated the relationships between the three

Table 2. Service quality dimensions

Service quality	Factors		Communality
	1	2	
Factor 1			
ontimeservice	.567		0.386
comfort	.718		0.526
quickresponse	.764		0.642
serviceorder	.683		0.485
preciseorder	.805		0.648
cleanmange	.754		0.581
cooperation	.678		0.614
sincereanswer	.711		0.619
kindness	.642		0.532
Factor 2			
knowledge		0.749	0.693
skill		0.751	0.723
regularpatron		0.781	0.617
Eigenvalue	5.72	1.35	
Variance (%)	47.66	11.22	
Cumulative variance (%)	47.66	58.87	
Cronbach's alpha	0.77	0.79	
Number of items (total=12)	9	3	

Note: 1) For this study, Kaiser-Meyer-Olkin (KMO) statistic was .888 (greater than .60) that indicated that the data were likely to factor well; Bartlett's test of Sphericity presented $p<.001$ indicating the correlation matrix is not an identity matrix, which is desirable for factor analysis.

2) ontimeservice denotes "The service time promised is met"; quickresponse "Staff quickly correct anything that is wrong"; serviceorder "Staff serve the item(s) exactly in order"; preciseorder "Staff provide the item(s) exactly as they are ordered"; cleanmange "Staff regularly clean tables and chairs"; regularpatron "Staff recognize me as a regular customer."

constructs and the number of coffee shop visit a month, it was found to be more meaningful results than the relationships with overall customer satisfaction. Except for physical environments Factor 5, all four factors were significant independent variables in the number of visit to coffee shop, which accounted for 82.2% of the variability in the coffee shop visit frequency. From the result, Hypothesis 4 that presents "Physical environments in coffee shop will positively influence a number of visitation to coffee shop" were partially accepted. Both service quality Factor 1 and 2 were significant predictors of the number of coffee shop visit, which demonstrated 73.8% of the variance in the dependent variable. It resulted in getting Hypothesis 5-service quality will positively influence a number of visitation to coffee shop-acceptable. Likewise, menu Factor 1 and 2 became significant regressors to impact on the number of coffee shop visit, which accounted for 74.7% of the variance in the frequency of visit to coffee shop. It turned out that Hypothesis 6-Importance of menu will positively influence a number of visitation to coffee shop- was accepted.

CONCLUSIONS AND DISCUSSION

Without any deletion of independent variables pertaining to physical environments, service quality, and importance of menu in coffee shop, all explanatory variables were loaded on each factor with a criterion of factor loading > .4. Of the five variables created from physical environment constructs, the three variables predicted overall satisfaction for targeted sample, that is, a group of college students. Additionally, both two variables produced from service quality construct and other two variables from menu concept were found to be important determinants to change the satisfaction. Also notable is the finding that Physical environment Factor 5 showed the negative relationship with the overall satisfaction. It carefully anticipated that there are some physical variables to negatively affect customer satisfaction in coffee shop.

In the relationships with the number of visit to coffee shop, for physical environments, the four variables of the five created variables had significantly impacted on the frequency of coffee shop visit. All of the two variables created from service quality became significantly influential factors in the number of coffee shop visit. Likewise, each of the two independent variables derived from menu items individually impacted on the frequency of coffee shop visit. In sum, most of the selected variables related to physical environments, service quality, and importance of menu showed significant relationships with overall satisfaction and the number of visit to coffee shop. These findings are expected to inform coffee shop owners, marketers, or practitioners engaged in the coffee industry of paying more attention to customers' needs for physical environments, service quality, and menu around coffee shops.

A few drawbacks of this study were revealed with a specific period of time and limited location for data collection. Also, because research subjects for the study were targeted solely college students, generalization of this study was beset with many issues.

Table 3. Menu dimensions

Menu	Factors		Communality
	1	2	
Factor 1			
variouscoffee	.727		.531
otherbever	.846		.721
otherbeverfla	.695		.560
sidemenu	.872		.761
sidemenufla	.834		.702
Factor 2			
flavor		0.701	0.499
properamount		.728	0.56
reasonablepri		.653	0.428
Eigenvalue	3.36	1.40	
Variance (%)	42.02	17.5	
Cumulative variance (%)	42.02	59.51	
Cronbach's alpha	0.81	0.74	
Number of items (total=8)	5	3	

Note: 1) For this study, Kaiser-Meyer-Olkin (KMO) statistic was .676 (greater than .60) that indicated that the data were likely to factor well; Bartlett's test of Sphericity presented $p < .001$ indicating the correlation matrix is not an identity matrix, which is desirable for factor analysis. 2) variouscoffee denotes "A variety of coffee items are available"; otherbever "A variety of non-coffee items are available"; otherbeverfla "The non-coffee item(s) tastes good"; sidemenu "A variety of non-beverage items are available"; sidemenufla "The non-beverage item(s) tastes good"; properamount "The serving size of the menu item(s) is right for me"; reasonablepri "The menu prices in the coffee shop are reasonable."

Table 4. Impacts of physical environments, service quality, and menu on overall satisfaction and the number of coffee shop visit

Independent variables	Beta	t
Dependent variable: overall satisfaction (adjusted R^2= .775; F=8.237; p<.001)		
Physical Environments Factor 1	.89**	3.93
Physical Environments Factor 2	.78**	3.42
Physical Environments Factor 3	−.08	−.35
Physical Environments Factor 4	−.17	−.73
Physical Environments Factor 5	−.83**	−3.66
Dependent variable: overall satisfaction (adjusted R^2= .640; F=6.617; p<001)		
Service Quality Factor 1	.10	.42
Service Quality Factor 2	.83**	3.61
Dependent variable: overall satisfaction (adjusted R^2 = .780; F=7.107; p<0.001)		
Menu Factor 1	–.26	–1.12
Menu Factor 2	.61**	2.64
Dependent variable: the number of coffee shop visit (adjusted R^2= .822; F=43.98; p<001)		
Physical Environments Factor 1	.29**	9.00
Physical Environments Factor 2	.33**	10.51
Physical Environments Factor 3	.07*	2.06
Physical Environments Factor 4	.13**	4.23
Physical Environments Factor 5	−.08	−2.48
Dependent variable: the number of coffee shop visit (adjusted R^2= .738; F=46.921; p<.001)		
Service Quality Factor 1	.23**	6.89
Service Quality Factor 2	.23**	6.82
Dependent variable: the number of coffee shop visit (adjusted R^2= .747; F=19.129; p<.001)		
Menu Factor 1	.17**	4.74
Menu Factor 2	.14**	3.96

Note: 1) *significant at the $p < 0.05$; **significant at the p<.001.
2) Durbin-Watson statistics (1.76~1.94) indicate that the assumption of independent errors is acceptable in all regressions done. No multicollinearity was detected because of VIF values (>1.00) and tolerance statistics (>.2) in the data.

Therefore, it looks forward to the following research focusing on general coffee shop visitors, regardless of those college students. Even though this study involved in the segmented market constituting college students, as an exploratory study, maintains to contribute to a piece of wide research area associated with the coffee industry, much research concerning the issues of physical environment and consumer behavior in coffee shop remain undeveloped, given that most research have been dealt with limited research topics such as selection attribute of coffee shop, customer loyalty, satisfaction, and brand personality. There are many homework accumulated that academic scholars need to work on. For instance, rather than showing multiple regression models shown in this study, a developed model with structural equation modeling method is needed to better understand not only the relationships between individual variables, but also significant moderators. Finally, it is discreetly expected to improve survey instrument and research model from differing aspects of future work.

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