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Assessing the Role of Restaurant Menu Attributes on Customer Satisfaction and Behavioral Intentions

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Abstract
Purpose- The purpose of this research paper was to explore various attributes of menu influencing customer satisfaction and behavioral intention.
Design/methodology/approach- A self-administered questionnaire was developed and filled by respondents who had dining experience in casual and fine dining restaurants. A total of 600 valid surveys were collected. Descriptive statistics were used to summarize the demographic information. Further, factor analysis, structural equation modeling was used to analyze the data.
Findings- Based on the results of exploratory factor analysis, menu design, font style, menu item position, ambiguous food names, product information and electronic menu were main attributes of restaurant menu. Furthermore, structural equation modeling confirms that ambiguous food names have most significant influence on customer satisfaction and behavioral intentions.
Practical implications- Restaurants can leverage the insights of this research to strategically design and name their food items on menus. Offering dishes with ambiguous names can spark customers' interest and boost them to inquire about flavors and ingredients, fostering satisfaction and engagement.

Keywords- *Restaurant Menu, Menu Design, Customer Satisfaction, Behavioral Intentions*

1. Introduction

The restaurant menu is our doorway into the world of succulence. The basic purpose of menu is to let customers know what type of food items are available and how much each item cost, but a real restaurant owner knows that a menu offers much more than that. As stated by (Wang, 2012) the menu is not just an element of a restaurant but it acts as a marketing tool,an indicator of cuisine, a branding opportunity, and a barometer of taste.
It is also true that modern customers demand a greater degree of transparency concerning menu items. They want to know more about the ingredients as well as where they come from (Hartwell & Edwards , 2009), (Mills & Thomas, 2008). The restaurant menu serves as the main vehicle for conveying such information (McCall & Lynn, 2008). Previous researches have also given certain interesting findings related to customer satisfaction and behavioral intentions. Providing menu with nutritional information can change the behavior of customers and incline them towards low- calorie items (Piron, Smith, Simon, Cummings, & Kuo, 2009).
With increased competition and to stand out in the restaurant industry, customer satisfaction has become vital for improving performance of business and strengthening customer loyalty (Namkung & Jang, 2007). Due to this, many restaurant practitioners have taken a step further and started using ambiguous food names that are more abstract and atypical as compared to regular and descriptive food names. Further, this pandemic has affected every business majorly the restaurant industry. Although when the restaurants re-opened, for safety purpose, many restaurants improved their customer experience by offering restaurant menus through restaurant website or through online food ordering platform. Also, electronic menus became an effective way to enhance the quality of order information, menu usability and customer satisfaction (Beldona, Buchanan, & Miller, 2014).

2. Review of Literature

Table 1 - Literature Review

S. No	Author	Country	Sample size	Independent variables	Dependent variables	Findings

1.	(Lockyer, 2006)	Hamilton, New Zealand	200 respondents Cluster analysis, multi-dimensional techniques and contentanalysis	Restaurantmenu words	Purchase of menu items	Wording for menu item selection influenced by occasion and participants.
2.	(Mills & Thomas, 2008)	U. S	276 restaurant customers Confirmatory factor analysis	Nutrition information , product information and food preparation information	CIERM	Customers desire disclosure of nutritional information , product information and food preparation
3.	(Yang, 2012)	U. S	25 respondents ANOVA and paired t-test	Gaze motion or scan paths	Menu area	As per the results, no sweet spot exists. However, a person first gaze at the left corner of the first menu page.
4.	(Leung, Josiam, & Moody, 2019)	South-central U. S	274 respondents Structural equation modeling, ANOVA, MANOVA and multi- group analysis	Menu type (papervs. tablet)	Functionality, design, pleasure foremotional response	Self-service tablets found to have better design while paper menus elicit better communication.
5.	(Sobaih & Abdelaziz, 2022)	Cairo and Giza, Egyp	408 respondents Structural equation modeling	Attitude, subjective normsand	Intention to buy, intention to visit and intention to recommend	Positive and significant influence of perceived behavioural control and subjective norms found on customer intention to buy food items labelled with nutrition content at FFOs. Further, customer intention to buyshowed direct positive influence on recommendations and revisit intentions.

3. Research Methodology

(a) Construct measures and scales

To arrive at conclusions, we examined the results with the help of primary data. A total of 24 menu related attributes were identified on the basis of relevant literature. Apart from these 24 statements, information related to socio-demographics were also collected. A 5-point Likert scale (1- strongly disagree and 5- strongly agree) was used to collate the responses.

In addition to this, *Customer satisfaction* was operationalized using three variables adapted from (Oliver, 1997) and two variables adapted from (Ladhari, Brun, & Morales, 2008). Further to assess the *Behavioral intentions* of respondents, four variables were adapted from (Zeithaml, Berry, & Parasuraman, 1996).

(b) Data Collection

Using a ***convenience sampling approach***, the responses were gathered from casual and fine dining restaurants in Chandigarh. Questionnaires were distributed randomly to the customers who were waiting for their bills or orders. Further, voluntary participation in the survey was requested by customers. A total of 647 questionnaires were collected, out of which ***600*** responses were used for analysis and the remaining were rejected due to incomplete responses.

(c)Method of analysis

For analysis, firstly, we employed Exploratory Factor Analysis (EFA) to explore the factors of restaurant ambience influencing customer satisfaction and behavioral intentions. Next, to examine the relationship between measured and latent constructs, Structural Equation Modeling (SEM) technique was applied on the data set. SPSS 26.0 and AMOS 24 software packages were used for statistical analysis in this research.

4. Data Analysis and Findings of the Study

The initial analysis comprised of exploratory factor analysis using SPSS software. The reliability of the data is checked by Cronbach's Alpha (0.921). The value of Cronbach's Alpha on this data was justified as according to (Nunnally, 1978), (Cronbach, 1990), value of 0.6 and above is appropriate for factor analysis. Pearson correlation measures the association between variables and was found to be satisfactorily correlated as the mean correlation is 0.363 which varies from 0.154 to 0.697 with a range 0.542. To test the validity of the scale, Kaiser Meyer Olkin (KMO) was applied. The KMO measure was 0.895 which suggest that sampling is highly adequate (Kaiser & Rice, 1974). Also, the Bartlett's test of sphericity which tests the null hypothesis has a value of chi-square = 9745.661, df=276, which are significant ($p< 0.5$). Thus, it directs that the data was amenable for conducting factor analysis. Moving towards the results of exploratory factor analysis, factor loadings ranged from 0.644 to 0.864. Six factors have been extracted which collectively explain 73.72% of variance (Table 3).Menu Design (F1), Product Information (F2), Ambiguous Food Names (F3),Font Style (F4), Electronic Menu (F5) and Menu Item Position (F6) emerged as important aspects of menu influencing customer satisfaction and behavioral intentions. Further, construct reliability and validity were examined by confirmatory factor analysis. Further, the composite reliability of every construct ranges from 0.738 to 0.952, which are greater than the threshold of 0.7 (Hair , Howard, & Nitzl, 2020). To confirm Convergent validity, both indicator loadings and Average variance extracted (AVE) are examined and all AVEs exceed the benchmark of 0.5 as suggested by (Fornell & Larcker, 1981) . The factor loadings were also above the threshold of 0.50, the smallest loading being 0.644. To support discriminant validity, the square roots of the AVEs (diagonal elements) should be larger than the inter-construct correlations depicted in the off-diagonal entries (Fornell & Larcker, 1981). Thus, the criteria for discriminant validity are also fulfilled.

Table 2- Factor Analysis (Rotated Component Matrix)

	Component					
	1	**2**	**3**	**4**	**5**	**6**
Factor 1						
Waterproof menus are more durable.	.864					
A good quality paper gives a touchof class.	.845					
Heavier menus signal high standards and service quality.	.840					
The menu color influence my	.815					
decisions.						
I prefer light weight menus.	.757					
The menu represents the theme of a restaurant.	.717					
Factor 2						
The menu should provide nutrients information on each food item.		.811				
The menu should provide a list of all ingredients.		.785				
The menu should provide specific brand names if used in the food preparation.		.767				

The menu should specify the cooking /preparation method.		.714				
The menu should provide information on the quality andquantity of the food.		.682				
Factor 3						
Ambiguous food names misleadme.			.804			
It is difficult to pronounce Ambiguous food names.			.783			
Ambiguous food names persuademe to try a particular item.			.767			
Ambiguous food names make the menu more presentable.			.753			
Factor 4						
A menu with more than one fontdelights me.				.857		
Small font is difficult to read.				.838		
Simple font style would be easy toread.				.719		
A complex font represents a combination of complexingredients.				.684		
Factor 5						
Electronic menu is easily accessible.					.749	
It is difficult to use electronic or tablet-based menus.					.693	
I feel anxious about using technology.					.644	
Factor 6						
I look at the first and the last item on a particular menu page.						.816
There should be a suitable space between different menu items.						.799
Eigen values	8.712	3.943	1.724	1.2266	1.044	1.002
%Variance	36.301	16.430	7.184	5.274	4.349	4.177
Cumulative % Variance	36.301	52.731	59.915	65.190	69.539	73.716
Cronbach's Alpha	.913	.914	.860	.862	.792	.816
Cronbach's Alpha = .921						

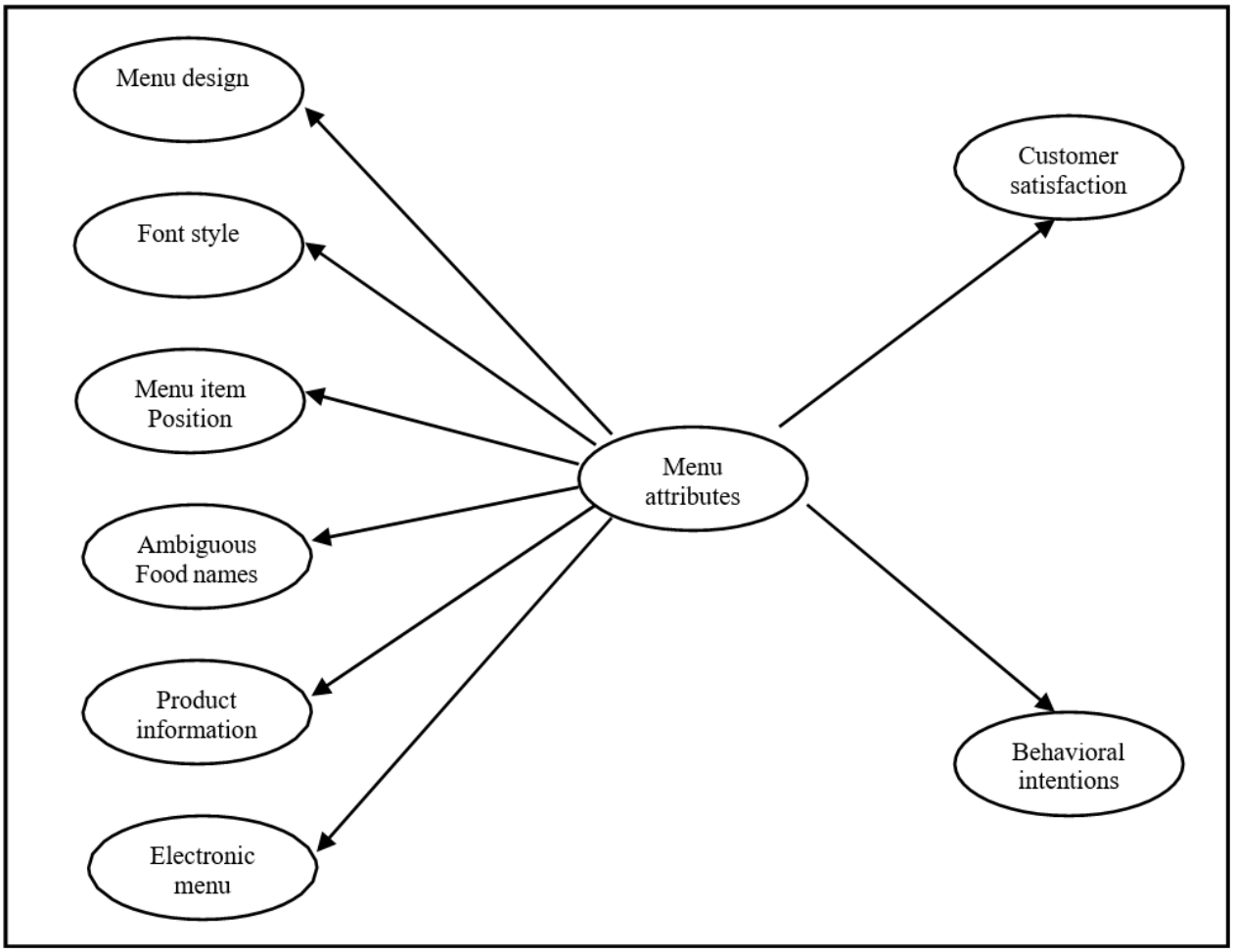

Figure 1 – Conceptual Model

Demographic Analysis

Descriptive statistics were employed, and female respondents (n= 365) constituted 60.8% of the sample while male respondents (n=235) accounted for 39.2%. Analysing the age of the respondents it was revealed that majority of the respondents 60.3%(n=362) were in the age group of 26-45 years ,36.5% belonged to 18-25 years of age and only 3.2% belonged to 46-65 years of age. Among those surveyed 31% (n=186) were students, 25.3% (n=152) were doing job, 13.7% (n=82) were in business and 30% (n=180) were professionals and others. Further analysis revealed that majority of the respondents 51.5% (n=309) visit restaurants with friends, 36.3% (n=218) go out for dinner with their families, 5.2% (n=31) visit restaurants for business purposes and 7% (n=42) go for dining only on special occasions.

Confirmatory Factor Analysis

Structural equation modeling using Amos 24 verifies the precision of the conceptual model. The model's chi-square was 1004.692 with 464 degrees of freedom, which signifies a good model fit. The value of CMIN/DF being 2.165 indicates an acceptance model fit between 1 and 5 (Carmines & McIver, 1981). In addition, GFI, NFI, TLI and CFI should be greater than 0.90 to indicate that the model fits well. The root mean square error of approximation (RMSEA) being .044 which is within the recommended values. Also, to achieve values of the model as per given guidelines, misspecification issues were handled by applying modification indices between e8-e10, e9-e10, e30-e33 and e31-e32.Thus, theseresults demonstrate the appropriateness of the variables considered. All the model fit indices have been shown in Table 5 and the final model is shown in the figu

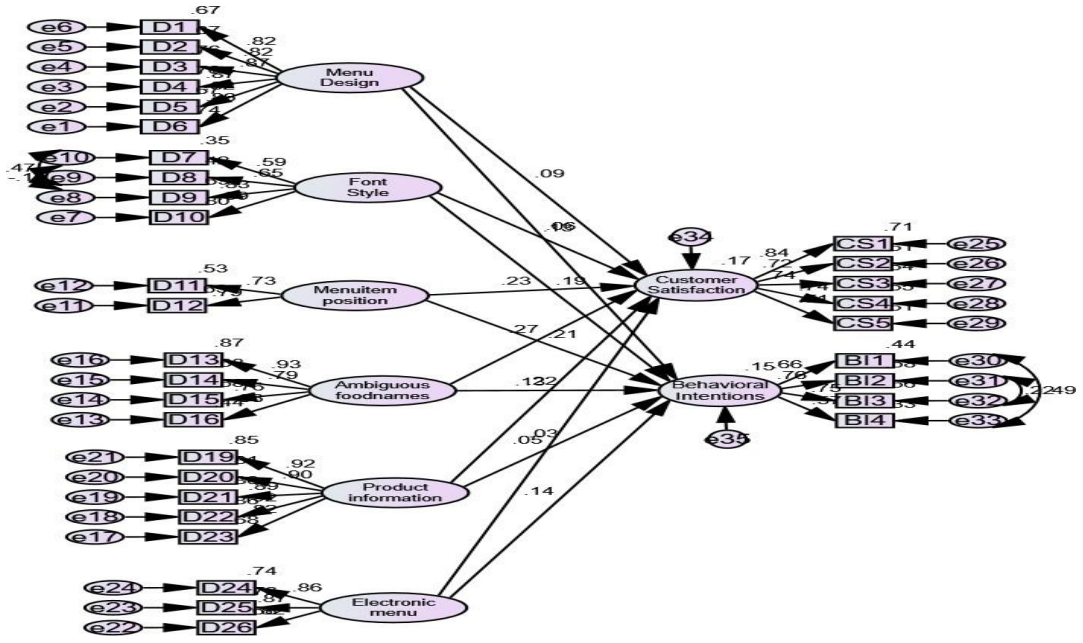

Figure 2 ---: Structural Model with Standardized Regression Weights

Table 5---: Structural Models' Fit Assessment		
Name of Indices	**Default Model**	**Guidelines (Recommended)**
Chi Square (Chi- Square minimum	1004.692	
CMIN/DF	2.165	Good Fit (Between 1 and 5)
RMSEA	.044	Good Fit (Between 0.03 and 0.08)
GFI	.910	Good Fit (> 0.90)
CFI	.962	Good Fit (>0.90)
TLI	.956	Good Fit (>0.90)
NFI	.931	Good Fit (>0.90)
PNFI	.818	Good Fit (>0.60)
PCFI	.845	Good Fit (>0.60)

CMIN/DF: Minimum discrepancy divided by degree of freedom, RMSEA: Root mean square error of approximation: Goodness of fit, CFI: Comparative fit index, TLI: Tucker- Lewis index, NFI: Normed fit index, PNFI: Parsimony normed fit index, PCFI: Parsimony comparative fit index

Hypotheses Testing

After the analysis, Table 6 shows the results of the entire hypothesis. H1, H3, H4, H5, H6, H7, H8, H9 and H12 has shown significant influence on customer satisfaction and behavioral intentions. The hypothesis H2 is rejected and has regression weight 0.065.Likewise, Hypothesis H10 and H11 are also rejected and have regression weights 0.030 and 0.049 respectively.

Table – Structural parameter estimates				
Hypothesis		**β coefficients**	**Standard Error**	**P value**
H1 Menu design → Customer Satisfaction	Accepted	.092	.044	.030
H2 Menu Design → Behavioral Intentions	Rejected	.065	.039	.165

H3 Font Style → Customer Satisfaction	Accepted	.128	.042	.003
H4 Font Style → Behavioral Intentions	Accepted	.187	.039	***
H5 Menu Item Position → Customer Satisfaction	Accepted	.229	.060	***
H6 Menu Item Position → Behavioral Intentions	Accepted	.207	.053	***
H7 Ambiguous Food Names → Customer Satisfaction	Accepted	.273	.061	***
H8 Ambiguous Food Names → Behavioral Intentions	Accepted	.225	.057	***
H9 Product Information → Customer Satisfaction	Accepted	.125	.038	.003
H10 Product Information → Behavioral Intentions	Rejected	.030	.033	.509
H11 Electronic Menu → Customer Satisfaction	Rejected	.049	.041	.260
H12 Electronic Menu → Behavioral Intentions	Accepted	.144	.037	.004

Note: ***P< 0.001

5. Conclusion And Managerial Implications

The current study investigates the various attributes of restaurant menu and their influence on customer satisfaction and behavioral intentions. Based on the findings of EFA of restaurant menu attributes; menu design, font style, menu item position, ambiguous food names, productinformation and electronic menu were extracted as the major factors of menu attributes. Fromall the six attributes, ambiguous food names emerged as the most important factor influencingcustomer satisfaction and behavioral intentions. This finding is supported by (Lockyer, 2006),according to which the wording of menu items significantly influences customers' choices and perceptions. Further, to talk about restaurant menu design, it significantly influences the satisfaction level of customers but not majorly affect the behavioral intentions of customers. The results concur with the findings of the previous studies (McCall & Lynn, 2008), (E Baiomy, Jones, & M H Goode, 2017). As the menu design in our research includes weight, paper quality and menu color, thus may not be enough to affect the behavior of customers as there are other more important attributes of menu. Further, in a restaurant context, there is dearth of studies related to font styles of menu. Our study findings revealed that font style of menus influence both customer satisfaction and behavioral intentions and the findings are supported by the study conducted by (P. Magnini & Kim, 2016) which stated that italicized font had significant impact on expectations of customers related to upscale and servicequality. Adding to this, there is not much research related to menu item position but (Dayan & Bar-Hillel, 2011) stated that customers tend to focus on the top and bottom of menu rather than middle and by placing best dishes on these focal points, the satisfaction level as well as behavior of customers can be influenced. People now a days have become more health conscious and they want restaurant menus to provide sufficient information related to food. Results accord to those of (Landis , 1999) who also confirmed that there is an increase in number of customers who pay attention to nutritional information. While on the other hand, having excess information can sometimes add stress to the dining experience of customersand this is in line with the results of (Mills & Thomas, 2008) who stated that certain factors such sodium content does not provide any importance to customers. Now with the advancement of technology, the restaurateurs have started using tablet or electronic menus but there are some people who need interaction with the staff before ordering food. This is a significant finding of the study which is in line with the results of (Leung, Josiam, & Moody, 2019). Alternatively for some especially younger generation, who don't have any technology anxiety, electronic menus are more convenient option (Wang & Wu, 2014) .

For the restaurant industry, the results of this study have several managerial implications. It is suggested that restaurant practitioners seeking high service quality and sophistication should use ambiguous food names in their menus. The menu planners should also note that while making use of different font styles, the readability of menus should not be affected. Some studies such as (Song & Schwarz, 2008) have found that individuals do not respond well to difficult to read font styles. Thus, toconvey high service standards and upscale image, a restaurant's font style should

be easily legible. Since technology plays a vital role in management and operation of hospitality and restaurant industry, it has become essential for practitioners and managers to stay informed related to technology development and its applications. The electronic menus can also soak large amount of information related food items which would not be possible on paper-based menus.

6. Limitations and Future Research

The data for this research has been collected from the customers visiting casual and fine dining restaurants in Chandigarh (India) only, thus the generalizability of the results shouldbe treated with caution. Though, the number of respondents (i.e., 600) are significant enough to represent Chandigarh, future studies should target larger sample size. Also, the results may vary across different countries as customers' satisfaction and behavioral intentions might differ across different cultures. This research was conducted in the period of novel corona virus, which posed another challenge in collecting data. So, in future, a comparison study can be carried out to examine the effect of menu attributes on customer satisfaction and behavioral intentions before and after COVID-19.

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