

## USE OF MENU DESIGN TECHNIQUES: EVIDENCES FROM MENU CARDS OF RESTAURANTS IN ALANYA

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### ABSTRACT

This study aims at identifying the existence of menu design techniques in actual menu cards, and to question whether use of those techniques is intentional. In total, 86 menu cards were collected from restaurants located in Alanya which is a tourist resort in Antalya, Turkey. Both qualitative and quantitative analyses were performed. First, content analysis was utilized to categorize the qualitative data, and second logistic regression was conducted to test the prescribed relations between menu variety and existence of techniques. Findings from qualitative analysis revealed that restaurant operators rarely use menu design techniques intentionally for boosting sales of high-price menu items. Subsequently, the quantitative analysis showed that existence of a technique on the menu card is not predicted by menu variety. This finding confirms the view that use of menu design techniques was unintentional. Theoretical and practical implications of findings were also discussed along with the limitations of current study and recommendations for future research.

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## INTRODUCTION

The merits of menu are widely appreciated by both academics and practitioners due to its impact on not only foodservice operations but also on consumers' behaviors in restaurant settings. Thus, it is substantially important to understand the critical roles that menu plays in foodservice experiences on the one hand, and operations on the other hand, with reference to consumers' and restaurant operators' perspectives. Menu serves as a source of information for customers on what to eat, how to eat and how much to pay for it. From restaurant operators' perspective it becomes a powerful tool for planning, marketing, executing and controlling the operational processes as well as designing the consumers' experiences. In particular, prior academic research and texts in industrial journals have primarily dealt with the issues of planning; pricing; designing, and analyzing the restaurant menus in order to understand and improve its roles in foodservice settings (Smith, 2013; Wiener, 2015; Bausch, 2017). In this orientation, researchers and foodservice operators have attached material and immaterial meanings to menu. Materially, menu is considered as a list or a card which documents the food and beverage offerings of a restaurant while it is seen as a medium that has a considerable impact on customers' perceptions of restaurant experiences in its immaterial meanings (Ozdemir & Caliskan, 2014). Consequently, it is commonly stressed that menu is a powerful tool for boosting restaurant sales. However, academic studies on menu predominantly project on consumer behavior perspective rather than an operational standpoint.

Menu design, as an apparent academic direction in menu research, mainly holds a consumer viewpoint. Accordingly, the studies in this direction contribute to our understanding of how design attributes of a menu display affect customers' perceptions of menu items, and attract their attention to particular menu choices. Those studies also stress that menu design attributes eventually impact customers' item ordering behaviors. The prior research has mainly focused on the measurement of restaurant customers' reactions to graphics (Reynolds et al., 2005; Choi et al., 2010), pictures (Guéguen et al., 2012), labels (Wansink et al., 2005; Guéguen & Jacob, 2012) and descriptions (McCall & Lynn 2008; Liu et al., 2012; Yoon & George, 2012), or to replacement of menu item on menu card or in a list (Kincaid & Corsun, 2003; Dayan & Bar-Hillel, 2011). As a result, a substantial amount of suggestions for practical use of menu design can be derived from relevant academic studies. However, there is very little amount of empirical evidence that explains how restaurant operators design their establishments' menu cards in real life situations. Only

several recent studies hold an operators' perspective to understand the operational aspects of menu design: one by Filimonau and Krivcova (2017) which reveals the managerial opinions on the role of menu design, and the others by Baiomy and Jones (2016) and Baiomy et al. (2013) examining the use of menu design in marketing resort hotels, In this context, the current study takes a relatively alternative approach to investigating the menu design construct by specifically examining the real menu cards collected from local restaurants operating in a tourist destination. Thus, this study's first aim is to identify use of menu design techniques in actual menu cards in comparison to theoretical suggestions made by prior menu design research. Second, the study also questions whether use of any technique, when its existence is detected on menu cards, is incidental or intentional.

## LITERATURE REVIEW

Academic studies on menu management are rapidly growing, and menu design literature is one of the latest developing scholarly domains related to menu. This literature includes not only attributes of menu design but also theoretical frameworks which explain how menu design affects consumers' item ordering behaviors.

### **Attributes of menu design**

Menu researchers mainly deal with attributes of menu design including menu item position, menu item labels and descriptions, and menu card features (Ozdemir, 2012). The common idea is that those attributes have a considerable impact on restaurant customers' item ordering behaviors and also on their behavioral intentions towards restaurants such as revisit and recommendation, because menu design positively affects customers' awareness, value, quality, healthfulness and taste perceptions of menu items or their assessments about quality of restaurant services.

Menu item position refers to positioning of menu items on a menu display (a card or a board), and in a menu category list. In this domain of menu design, researchers (Sobol & Barry, 1980; Bowen & Morris, 1995; Kincaid & Corsun, 2003; Reynolds et al., 2005; Choi et al., 2010; Yang, 2012; Dayan & Bar-Hillel, 2011) attempted to understand are there any so called menu sweet spots (if they exist, these are placed in the right upper or lower corner of a page where the reader's initial and final glances are focused on), and whether the placement of menu items on those spots or

at the top or bottom of the category list may increase their sales. Although the studies did not present consistent findings, this line of research suggests that placement of an item on a menu display can increase customers' awareness of that item, and may positively influence its sales.

Menu item description refers to introduction of verbal information about menu items on a menu display. In this research direction, researchers initially focused on details or complexity of descriptions. For instance, McCall and Lynn (2008) found that customers perceived items higher in quality when they are described in more complex terms while the evidence provided by Shoemaker et al. (2005) demonstrated that detail of descriptions had a positive impact on customers' value perceptions. A more recent study by DiPietro et al. (2016) has also confirmed the positive effects of menu information on customers' food quality perceptions and their intentions to revisit or spreading positive word-of-mouth. Prior research also indicates that nutrition information (calorie and fat), product information (harmfulness and ingredients), and food preparation information (cooking method, quality and ingredients) are pieces of information that restaurant customers expect to see on menu cards (Mills & Thomas, 2008; Mackison et al., 2009). A latest study by Fasih et al. (2016) revealed that different types of information relevant to product, nutrition or preparation positively influence customers' purchase intentions, depending on the scale of restaurants (high, mid or low). Among them, nutritional information gains a particular attention from researchers (Hwang & Lorenzon, 2008; Roberto et al., 2010; Pulos & Long, 2010; Liu et al., 2012; Yoon & George, 2012; Kim et al., 2013; Wansink & Love, 2014; Lo et al., 2017) probably due to the customers' growing interest in healthy eating. Specifically, customers may perceive that items with nutrition information are healthier offerings than the other choices, and relying on this information, they may change their orders to healthy options. The research on menu item descriptions presents relatively consistent findings and supports the argument that relevant and sufficient information assist customers in making more informed choices, and eventually, this process results in higher sales for the items with appropriate descriptions.

Menu item labels imply that using evocative labels instead of regular ones can stimulate positive perceptions of consumers. Empirical evidence by Wansink et al. (2001) supports this view, and their findings revealed that restaurant customers evaluated menu items more positively than regular-label items with reference to food quality. Wansink et al. (2005) also demonstrated that evocative labels had a potential to assimilate customers' post-consumption evaluations (value, taste and quality) as well

as their pre-consumption expectations. Research by Lockyer (2006) also supports those findings by revealing that some words (organic, natural, fresh etc.) on menu item labels may have a mouth watering effect and can influence customers' item choices. More recently, Guéguen and Jacob (2012) focused on affective labels (family, tradition and patriotism), and their findings showed that those labels were associated with greater sales. Overall, research on menu item labels suggests that evocative or suggestive names positively affect customers' taste, value and quality perceptions and evaluations, and subsequently this may influence their item choices.

Menu researchers also dealt with the visible features of menu display including color, fonts, pictures and boxes, and they question whether those features play a critical role in menus' impact on customers' behaviors. Despite the existence of controversial evidences that boxing of menu items has no significant effect on item's sales counts (Reynolds et al., 2005), some researchers have presented supporting findings and showed that graphics (Choi et al., 2010) and pictures (Guéguen et al., 2012) had a positive impact on item sales. Moreover, Feldman et al. (2014) revealed that boxing had a positive impact on choice of healthy items. Recently, Magnini and Kim (2016) reported the positive effect of menu font style while a latest research by Hou et al. (2017) confirmed the favorable impact of pictures on customers' attitudes and intentions. As a consequence, those results highlights the critical role of menu card's visible features in increasing the possibility of items to be chosen because those features supply customers with the information about menu items' value, quality and taste attributes.

### **Theoretical frameworks in menu design literature**

Several researchers have used theoretical frameworks to explain the associations between the attributes of menu design and consumers' ordering behaviors. One of the most notable of them is called as gaze motion studies along with the rule of primacy and recency, which are cited by several menu researchers including Bowen and Morris (1995), Kincaid and Corsun (2003), Choi et al. (2010), and Yang (2012). A reader has an identifiable pattern of gaze movements across a display like a menu card and people can more accurately recall the first and last items seen or reviewed. As a result of reading menus in a predictable pattern, menu sweet spots emerge, and with a strategic placement of menu items

on these spots, it is possible to draw initial and repeated attention of customers to them in order to increase the possibility of their choice.

Some researchers consider Mehrabian and Russell's (1974) stimulus-organism-response (SOR) model which explains influence of physical environment on human behavior as an option for understanding the impact of menu design. According to the model, the stimuli (S) in the external environment lead individuals (O) to make evaluations which further impact their behavioral responses (R) as approach or avoidance. Relying on this argument, Guéguen et al. (2012) and Ozdemir and Caliskan (2015) suggest that features of a menu card or menu board are environmental stimuli which may lead customers to favorably evaluate the food as being tasty, healthy, valuable, and of high quality. Consequently, those evaluations make customers exhibit an approach which results in choosing the menu item.

Kim et al. (2013) prefer theory of planned behavior (TPB) which predicts human behavior largely relying on intentions to perform the behavior. Intentions are dependent on three variables including attitudes, subjective norms and perceived behavioral control. With such an argument, Kim et al. (2013) stated that customers' intention to read menu labels (especially the ones including nutritional information) may be predicted by their attitudes (beliefs about nutritional labeling and the importance attached to the outcomes of reading those labels); subjective norms (the existence of referent groups and their opinions about reading menu labels, and the individuals' motivation to comply those opinions), and perceived behavioral control (factors such as eating habits, time and effort, and ability that may affect individuals' beliefs about and power to control their behaviors of reading menu labels).

Unlike the aforementioned theories, signaling theory reflects the operators' perspective as well as the consumers' one. As described by Connelly et al. (2011), signaling occurs in a signaling environment where signaler (operator who highlights the quality of its product) sends a signal to a receiver (the customer who interprets the signal and chooses the product). Lo et al. (2017) adapted the theory to restaurant menus. According to their argument, operators will be selective while communicating the information about their menu offerings, and customers use those signals to infer the product quality. The signals selected and sent by operators will be positive and unique to product. The research findings by Lo et al. (2017) confirm their argument, and revealed that restaurant menu descriptions including nutritional and sustainability

information assist customers in evaluating the menu items that they will order. A possible inference of this argument might be that operators are more likely to choose and use unique signals such as locations, labels, descriptions, graphics and pictures on a menu display to communicate positive information about taste, quality, and value of the most profitable menu items to their customers. This will be an intentional process from the operators' viewpoint. In this way, they can orientate customers' attention to the items that they wish to sell more. Subsequently, customers will infer the signals and positively evaluate the items that are purposefully promoted by operators. The positive evaluations lead customers to order high-profit items, which eventually helps restaurant operators in increasing the food sales. The current study relies on this argument for detecting the use of menu design techniques in real life menu cards, and for understanding whether use of any technique is intentional. In fact, such a reasoning assumes that the aim of menu design is to create a display by which a foodservice establishment communicates its offerings to customers (Jones & Mifli, 2001), and to assist managers in directing customers' attention to the items that the foodservice establishment wants to sell more (Ozdemir, 2012). As briefly reviewed in the previous section of this paper, menu design literature suggests several techniques (positioning, describing and labeling of menu items, and featuring menu cards with fonts, pictures or graphics), and those are available to operators to intentionally use them for merchandising their establishments' menus.

## METHODOLOGY

The initial purpose of this study was to make a comparison between the suggestions made by menu design literature and the real life cases of selected restaurant menu cards. Thus, it was imperative to collect menu cards from restaurants and then to analyze their contents in a systemic way. The study employed both qualitative and quantitative techniques in order to organize and analyze the complex data collected from restaurants' menu cards.

### **Study setting and sampling**

Alanya is a well-known tourism destination in Antalya, Turkey, and this tourism resort has provided the setting for this study's empirical investigation. The diverse and abundant tourist resources including mild

climate, natural scenery, historical monuments, and beautiful beaches attract international tourists mainly from European countries (Barutcu et al., 2011). Additional to natural and historical attractions, the city also has a remarkable local food culture (Akis et al., 2008). However, prior research underlines that international tourists primarily visit the destination in summer seasons mostly by attending all-inclusive holiday packages with a major motivation to experience sun-sea-sand attractions (Aktas et al., 2010). Only one study by Dogan et al. (2012) presented specific findings for food experiences of tourists, and revealed that German tourists were more satisfied than Russian tourists with the quality of food and beverages that they had consumed during their holidays. Except this study, there is a scarcity in variety and amount of information about restaurant industry and consumers' eating out behaviors in the specific context of Alanya. However, it is reasonable to accept that Alanya's restaurant industry has similarities to general Turkish context. An overview of the studies (Ariker, 2012; Yildirim & Cengel, 2013; Yuksekbilgili, 2014) demonstrates that Turkish customers consider food variety and taste, price, employee behaviors, and service speed as critical attributes in their restaurant choices. It is also possible to primarily categorize restaurants in Turkey as (i) *traditional restaurants* serving traditional food as doner, kebab and pide, and (ii) *fast food restaurants* serving hamburger and pizza (Ozdemir et al., 2015). Additional to those categories, fine dining restaurants with Western or Asian style menus mainly exist in metropolitan cities.

Local authority's statistics show that totally 576 restaurants are in operation in Alanya. However, there is no information about the distribution of restaurants according to their categories except that 363 of them have a license to serve alcohol. Thus, a convenient sampling method was a suitable strategy to collect menu cards of restaurants in Alanya. Face-to-face contacts were made with operators of restaurants located in the central tourist district of city. Following a brief explanation of the research aims, a copy of restaurant's current menu was demanded. 86 restaurant operators had responded positively, and after an initial overview of the copies, all menu cards were deemed appropriate to be included into the subsequent analysis. Personal observations during menu card collection period, and browsing of menu cards tangible features during analysis gave an overall impression that majority of the restaurants in the sample were oriented to tourist needs, as it is common in Alanya. Additionally, some menu cards seem to belong to other types of restaurants such as traditional restaurants offering traditional food like



doner, kebab and pide on their menus. Moreover, there was no fast food restaurant's menu card in the sample. Indeed, researchers intentionally avoided to collect any card from a franchise restaurant. Considering the aim of current research, the sampling criterion is that restaurants should plan and design their own menus locally instead of a central approach adopted by franchise restaurant chains. An analysis of menus' tangible features provides information about the profile of menu cards in the sample. In 25 of menu cards single language (Turkish, English or German) is used while 61 of them include multiple languages. National or local dishes are dominant in 41 menu cards while international menu items are preferred in the remaining 45 cards. The average number of pages is 9.63 with a minimum value of 2 and a maximum value of 26. Minimum number of categories is two while the maximum number is 17. Number of menu items in menu cards ranges between 14 to 160 with an average value of 86.84.

### **Analyses**

In the qualitative analysis section of the research, content analysis was conducted in order to identify existence or non-existence of any menu design technique, and to determine the frequency of the existent ones. For this, each individual menu card was treated as unit of analysis since each card forms a unique context in which a combination of menu design techniques might be employed. A deductive approach was taken for analysis since there is a considerable amount of prior research on menu design techniques, and the primary purpose of this study was to empirically test menu design theory in a real life context.

Relying on the existing theory, the researchers of current study first identified key concepts as initial coding categories. Second, operational definitions for each variable were made. Third, all the data on the collected menu cards were reviewed for content and coded for correspondence with the predetermined categories. The coding scheme includes two main areas for each construct under investigation. The first one is the existence of the construct on the menu card and the second one is its description. A different approach was taken for only menu variety variables (number of categories and items). Categories and menu items were counted individually and the resulting numbers were noted on the coding scheme. Following this logic, data coding for each construct was made as explained below.

- **Product information:** The descriptions of menu items were analyzed in three domains of information including product, preparation and nutrition relying on the relevant literature. For product information, existence or nonexistence of information was noted and then if there was any, the sort of information (e.g. menu item's ingredients and potentially hazardous materials) was noted.
- **Preparation information:** First, the availability of information about how menu items was prepared and served was checked and second notes about the preparation method (cooking methods and times, presentation style) were taken if there was any explanation about the methods used.
- **Nutrition information:** Existence of information about calorie, protein, fat and sodium contents of menu items was examined and since it was observed that there was no information about nutritional value of menu items on all menu cards in the sample, it was not possible to take any note about this sort of information.
- **Evocative menu item labels:** Consistent with the relevant prior research on menu item labels, the primary investigation was to check whether any special feature of the menu item with reference to its geographic origins, brand, sensory and affective (family or patriotic) attributes was evocatively used in its name. If there was any, the examples were noted.
- **Pictures:** The primary consideration was detection of any sort of pictures, and then the examination was oriented to their content (what sort of an image is exhibited) and place (where the pictures are located) in case of their existence on card.
- **Differentiated font or larger type size:** First, the existence of any character which is differentiated in fonts or sizes from the common pattern used on the menu card was checked, and second, if there was any, descriptions about why and how it is used were noted.
- **Graphics:** Initially detection of any sort of graphics' use such as boxes or hand drawings was sought, and then the examination was oriented to where and why they were used in case of their existence.
- **Differentiated colors:** First, the existence of different colors on the menu card was checked, and second, if there was any, descriptions about why and how they are used were noted.

- Strategic positioning: First, this investigation relies on the argument that restaurant operators wish to locate their highly profitable menu items on strategic locations including the front pages of multi-page menu cards; the right upper or lower corners on a page or at the top or bottom of a category list. Second, it is also assumed that high priced menu items are more profitable than the others, and those are considered to be placed on the strategic locations. In this case, the location of the highest priced items in list or on page was checked and noted.

In the analysis process, researchers also consider trustworthiness which is an important aspect of qualitative research. Graneheim and Lundman (2004) and Elo and Kyngas (2007) suggested ways of assuring and showing trustworthiness in qualitative studies. One way is to sufficiently describe the details of research to the extent that it is clearly understandable and reproducible. That's why the current study provides information about study setting, collection of menu cards, and process of conducting content analysis in as many details as possible. Another way is to support the findings with quotations from the contents. Therefore, in this study representative examples of existent menu design techniques are presented on a table along with their frequencies and percentages. Developing and using a coding scheme is another consideration for trustworthiness (Hsieh & Shannon, 2005), and the current study used a coding scheme with categories and their descriptions that had been developed relying on the relevant literature. Seeking agreement among co-researchers is also another contributor to trustworthiness. Thus, during all phases of analysis (developing coding scheme, applying the coding scheme to data, and interpreting the emerging findings), the researchers of this study shared and discussed their ideas until they reached an agreement. Triangulation should also be a consideration for qualitative research (Ottenbacher & Harrington, 2013). Thus, for this study, triangulation was achieved both in theory and methodology. For triangulation of theory, this study cited and explained the attributes and theoretical frameworks in menu design. In doing so, first the attributes of menu design as described by the relevant literature were used to detect the menu design techniques on the sampled menu cards, and second signaling theory was referred to for an understanding of how operators use menu design techniques. For methodological triangulation, the study employed two different analytical approaches. More specifically, initially a qualitative analysis was conducted, and subsequently a quantitative analysis was employed. For this, the primary data were collected from a convenient sample of restaurant menu cards, and then those qualitative

data were coded and categorized, and finally the coded data combined with numerical variables of menu variety were employed in logistic regression models for predicting the relationships among research variables.

The quantitative section of the study tests the relationship between menu variety and existence of menu design techniques in order to understand whether the use of any technique is intentional. There is a rationale behind this examination. As stressed by the relevant literature and also indicated by signaling theory, the critical point in menu design is to promote high-profit items from operators' perspective. This view is also advocated by practical texts in industrial journals. Dave Ostrander (2013:18), who owned a highly successful independent pizzeria and was a contributor to *Pizza Today*, defends this view with the quotation that "Your menu is the best marketing tool you'll ever have. When a customer sits down and looks at it, you already know a sell is going to be made. The question is this: will that customer order a profitable dish or an item that is very popular but doesn't necessarily fill up your bank account?". Thus, it is expected that menu design techniques are intentionally applied to specific items that are probably the highest profitable ones, rather than all items. The impact of menu variety appears at this point, since it is logical to assume that depending on the variety of menu, the number of highly profitable items increases. More specifically, a menu including a variety of menu categories and items will contain a higher number of highly profitable items than a less diversified menu has. Consequently, it is expected that the number of high-profit items positively influences the existence of menu design techniques which are intended to underline those high-profit offerings on the card. Thus, there might be a relationship between menu variety and existence of menu design techniques if operators use those techniques intentionally rather than incidentally. In this study, menu variety as an independent variable was operationalized as the combination of two variables including number of menu items and number of categories relying on the prior research by Bernstein et al. (2008). To test the relationship between these two variables, this study employed logistic regression analysis. Indeed, logistic regression is a very suitable analysis to the case of this study, since the dependent variable (existence of a specific technique) is categorical (existence or non-existence). In this context, the use of a specific menu design technique is a dichotomous variable which has a value of "1" when it exists or a value of "0" in the case of non-existence. Menu variety is the only predictor variable in each of logistic regression models performed for each menu

design technique separately. Since there is only one predictor variable for each model, assumptions of logistic regression with reference to sample size and multi-collinearity were not violated. In fact, for the variables with insufficient number of cases, logistic regression model was not employed. For instance, because there was no menu card which includes nutrition information, and only one card contained graphic, logistic regression was not performed for those two variables in order not to violate the assumptions of analysis.

## FINDINGS

The current research includes both qualitative and quantitative findings which are briefly depicted on Table 1 and 2.

### **Descriptive and Qualitative Findings**

Table 1 summarizes both descriptive (frequencies and percentages) and qualitative findings of the study. Table 1 indicates that the most frequently used techniques are differentiated fonts or sizes (89.5%); pictures (86%), product information (70.9%), and differentiated colors (64%) respectively. Strategic positioning on page (47.7%) and in list (44.2%); evocative labels (41.9%), and food preparation information (32.6%) moderately exist on the sampled menu cards. Interestingly, there is no information about nutritional value of menu items while the graphics (1.2%) are rarely used. One possible explanation for absence of nutrition information might be that there is no legal obligation for restaurants in Turkey to display information about nutritional content of food items on menus.

The qualitative findings tell another story. Despite its frequent use, product information mostly refers to only the ingredients of dishes (mainly for pizzas, pastas, traditional Turkish food or cocktails) and includes no information for potentially hazardous substances. Where available, food preparation information frequently encompasses the methods used for cooking meat or seafood. Other information pieces such as cooking time or marinating style rarely exist. Evocative labels often focus on geographic names. As indicated by the frequencies, using differentiated fonts and type is common. A close examination of examples revealed a common pattern that those different fonts and/or sizes visually distinguish categories, labels and descriptions. A similar manner is pursued using different colors. Most of the menu cards contain pictures,

but only in a few cases pictures are directly associated with individual dishes. Instead, in a considerable amount of cases pictures are randomly located on the menu card. Nevertheless, in rare cases, it is also observed that pictures represent the destination's tourist attractions. Strategic positioning of menu items on a page or in a list is an occasionally adopted practice by local restaurants in the sample. Less than half of the restaurants locate their high price menu items on the right upper or lower corners on a page or at the top or bottom of a category list. In most of the cases, the highly priced products placed on last pages of multi-paged cards (commonly fourth or fifth pages).

Table 1. *Results of content analysis*

Criteria	Examples	Frequency	%
Product Information	Ingredients for pizza dishes, pastas, Turkish foods and cocktails	61	70.9
Food Preparation Information	Cooking methods (grilled, deep fry, pan fry, stewed) for meat dishes, cooking methods for sea foods, cuts (sliced, julienne), food marinating methods (with special spices) for meat, cooking time	28	32.6
Nutrition Information	-	0	0
Evocative Labels	Seasoned with fresh vegetables, home cooked Chinese style fried Steak, Alanya Special, Preferences of Ottoman Sultans, French style onion soup, Mexican style Steak, mommy style, delicious special Mediterranean Kebab	36	41.9
Pictures	Pictures of each pizza dish, pictures for each category, cartoon characters for kids menu, pictures for each dish, photographs of cultural and historical landscape of Alanya, monuments of Alanya, randomly placed pictures of dishes	74	86
Differentiated font or sizes	Four different fonts for category names, menu item labels, descriptions and beverages; larger type size for category names, different colors (white and blue on a pink background) for beverages; different type size for category and menu item labels	77	89.5
Differentiated colors	Seven different colors for category names, two different colors; one category names and the other for menu item labels	55	64
Graphics	Each category in a box	1	1.2
Strategic Location on Card	On the right lower corner at the first page, on the right upper corner of the second page	41	47.7
Strategic Location in List	At the bottom of the list, at the top of the list	38	44.2

### **Quantitative findings**

The results of a series of logistic regression analysis are depicted on Table 2. As noted earlier, two variables (nutritional information and graphics) were not included into the analysis due to the insufficient number of cases. The remaining dependent variables coded as dummy variables, and eight logistic regression models in which the menu variety was the predictor were tested. Statistics for -2LL, Omnibus Test Chi-Square Difference, Nagelkerke R Square, and Hosmer and Lemeshow Goodness of Fit Chi-Square were employed to assess the model fit.

Considering the results of logistic regression models depicted on Table 2, it is seen that menu variety is a significant ( $p = 0.002$ ) predictor for the use of a specific menu design technique only in one model (product information) out of eight. The classification percent (79.1%), Omnibus test (Chi-Square Difference Values = 11.785;  $p = 0.001$ ) and Hosmer and Lemeshow Goodness of Fit test (Chi-Square = 9.026;  $p = 0.34$ ) results indicate a good model fit for logistic regression model on the relationship between menu variety and product information. However, the values for Nagelkerke R Square (0.183) and OR (1.002) are relatively low, and those values indicate that menu variety cannot powerfully predict the use of product information in menu cards. Overall, results of logistic regression analyses clearly show that existence of menu design techniques in the sampled menu cards is not significantly or substantially associated with the range of menu variability.

Table 2. Results of Logistic Regression

Predictors	Output	Classification Percent	-2LL	Omnibus Test Chi-Square Difference (Significance)	Nagelkerke R Square	Hosmer and Lemeshow Goodness of Fit Chi-Square (Significance)	Wald	Sig.	OR
	Pro-Info	79.1	91.892	11.785 (0.001)	0.183	9.026 (0.340)	9.583	0.002	1.002
	Pre-Info	69.8	105.335	3.181 (0.074)	0.051	11.018 (0.201)	3.067	0.080	1.001
NofMI	EL	57.0	109.585	7.347 (0.007)	0.110	10.960 (0.204)	6.596	0.050	1.001
X	Pics	86.0	69.450	0.058 (0.810)	0.001	12.117 (0.146)	0.058	0.810	1.000
	DForS	89.5	57.651	0.001 (0.982)	0.000	2.982 (0.935)	0.001	0.982	1.000
NofC	DC	64.0	11.750	0.684 (0.408)	0.011	5.480 (0.705)	0.680	0.410	1.000
	SLinList	52.3	119.025	0.010 (0.921)	0.000	9.925 (0.270)	0.010	0.921	1.000
	SLonCard	59.3	116.970	1.086 (0.297)	0.017	3.933 (0.863)	1.070	0.301	1.000

NofMI: Total Number of Menu Items; NofC: Number of Categories; Pro-Info: Product Information; Pre-Info: Preparation Information; EL: Evocative labels; Pics: Pictures; DForS: Differentiated Font or Size; DC: Differentiated Colors; SLinList: Strategic Location in List; SLonCard: Strategical Location on Card



## DISCUSSION AND CONCLUSIONS

Considering the findings of current study which represent operators' perspective, it is possible to make theoretical and practical suggestions regarding use of menu design techniques in restaurant settings.

### **Theoretical implications**

The purpose of current study was to identify whether operators used menu design techniques intentionally. Findings derived from the content analysis of menu cards collected from restaurants in a tourist destination revealed that restaurant operators rarely used menu design techniques for boosting specific items' sales. Existence of some techniques (product information, differentiated fonts and colors, and pictures) on menu cards was quite frequent, but it is likely that the purpose of employing those techniques is to highlight the originality of menu items or to distinguish labels, descriptions and categories instead of a focused attempt at raising the sales of high-profit items. Additionally, the quantitative analysis also supported the view that use of menu design techniques was unintentional since menu variety is not a significant or substantial predictor of existence of menu design techniques in menu cards.

The theoretical framework of current study mainly relies on signaling theory, and the findings are, at least partially, supportive to a possible adaptation of this theory to menu design domain. For instance, qualitative evidence indicated that preparation information and evocative labels were used in less than half of the cases. Despite the low frequencies of their usage, it is plausible to infer that use of those two techniques was to signal some positive attributes of menu items. More specifically, the preparation information for meat or seafood dishes include cooking methods probably due to signal their quality, whereas some items' labels contain geographic names in order to signify their originality. Thus, it is possible to claim that operators wish to use some menu design techniques to send signals about the quality and uniqueness of dishes. In this case, they create a signaling environment, as suggested by Connelly et al. (2011), where they can underline the selected attributes (uniqueness and quality) of menu items through sending signals to customers who will infer the information and ultimately order the food. These results, to a certain extent, are consistent with the findings of Lo et al. (2017). Indeed, the sample of research by Lo et al. (2017) was constituted by diners of an independent hotel, and their findings mainly mirrored the consumers'

standpoint. Alternatively, the current study represents the operational perspective. However, those results are not sufficient to make a conclusion that restaurant operators use menu design techniques intentionally. Thus, the critical question is to what extent the use of menu design techniques is intentional.

The expectation in the current research was that restaurant operators are more willing to enhance the sales of highly profitable items, therefore they use menu design techniques in order to selectively signal the quality, value, healthfulness, and taste of that items as it is suggested by menu design theory. However, both the qualitative and quantitative findings were controversial to that expectation. This means that food preparation information, nutrition information, evocative labels, pictures, differentiated fonts or sizes, differentiated colors, graphics, strategic positioning on a page and in a list are not intentionally employed to promote the high-profit items. Qualitative findings provide some supportive examples of this view. In most cases, it was seen that pictures are randomly located on the menu card and they do not underline any specific dish. Moreover, strategic positioning of highly priced items is moderately frequent, and even in some cases those items were placed on fourth or fifth pages where their visibility is respectively lower than having a position on front pages. Thus, the findings of this study show that there is a discrepancy between theory and practice. From operators' perspective, there might be several reasons for this gap. The research by Filimonau and Krivcova (2017) revealed the key barriers to use of menu design techniques, and listed them as resource inadequacies to implement menu changes; inconsistencies in customer demand; complexities in organizational and operational processes (managerial support, supply chain issues, business size and location, reputation). More importantly, authors stated that those barriers lead operators to become skeptical about the usefulness of menu design techniques. Similar reasons might have prevented the restaurant operators in the sample of current research from intentionally using menu design techniques in order to affect their customers' item ordering behaviors.

### **Practical implications**

The conceptual and empirical evidences provided by this study allow us to offer some implications for practical use of menu design. Restaurant operators can evaluate their current positions towards the efficient use of menu design techniques through reviewing their establishments' menu

cards. The criteria which currently exist in menu design literature and have been already listed in this study provide an available checklist for such kind of an evaluation.

Besides detecting the existence of suggested menu design techniques on their establishments' menu display, operators should try to understand their way of using those techniques through making comparisons against the theory. In this way, they can make more informed and hopefully more accurate decisions on menu design and consequently they can develop positive cognitive beliefs about its usefulness. For this, it is critical to understand how design attributes of a menu display affect customers' item ordering behaviors. Some examples might be helpful to show the usefulness of menu design with reference to relevant theories. First, relying on the signaling theory, operators should know that they naturally send signals to their customers through menu display whether or not they make it purposefully. In fact, they should recognize that it is possible to intentionally design a menu card to create a signaling environment in which they can send unique and positive signals to customers who will interpret those signals for their item ordering decisions.

Second, as suggested by SOR model, favorable stimulus (in this case the signals send through menu design techniques) may lead customers to exhibit an approach behavior in the form of ordering menu items (the ones that the operator wants to sell more) as a result of their favorable evaluations about the items. For occurrence of a favorable evaluation, attitudes and perceived behavioral control are two important variables along with subjective norms as posited by the theory of planned behavior. At this point, operators may not have a direct impact on subjective norms but they are able to influence customers' attitudes and perceptions of behavioral control by employing menu design techniques. Sending the prudent and accurate signals about quality, taste and healthfulness of menu items can trigger positive attitudes of customers. Moreover, the sufficient and accurate information provided through menu labels and descriptions, and the increased readability of menu card through correct use of colors, fonts, sizes and blanks can ease customers ordering decisions and give them a sense of control over their ordering behaviors.

### **Limitations and future research**

The current study has several limitations. First, the findings come from restaurants located in only one place, namely Alanya. Although it is a

well-known sun, sea and sand destination for summer holidays, still it is not suitable to generalize the findings of this study to other similar holiday destinations due to the convenient sampling method employed in this research.

Additionally, the current study could not provide information about the profile of restaurants whose menu cards were used for analyses. Since the primary purpose was to analyze menu cards without any reference to possible effects of restaurants' profile, collecting information about restaurant characteristics was purposely avoided. Future research studies may consider collecting menus from different types of restaurants including casual, fine-dining and perhaps quick-service restaurants located in different destinations or metropolitan cities with a special care in collecting information about restaurants' profile to make comparisons across restaurant segments. The study also lacks the findings about the views of restaurant operators about why they do not use menu design techniques in accordance with the suggestions made in theory, because there was no interview or sampling procedure with restaurant operators on this issue which is beyond the objectives of the current study. But this issue also deserves a specific academic attention.

The current study assumes that the number of highly profitable menu items will increase in proportion to menu variety. However, this remains as an assumption and could not have been tested. The main reason is the difficulty in detecting the number of high-profit items on menu cards. In fact, this study states that high-priced items can be accepted as high-profit items relying on the argument that price is an important determinant of menu items' profitability. However, neglecting the cost of menu item is the most important weakness of this argument. But monitoring all cost components (such as material costs, labor costs, and overheads) item-by-item basis in restaurant settings is a very difficult task requiring specialized accounting techniques such as activity based costing, it is almost impossible to collect cost data from restaurants to calculate each item's profitability. Nevertheless, the study inevitably used the price information to make an approximation for high-profit items on a menu card or in a category list just for strategic locations. In doing so, only the highest priced items were considered. Future research may specifically concentrate on the relationships among the variables of menu mechanics such as number of menu items, number of menu categories, number of high-priced items, and number of low-priced items. It is clear that findings of this line of research will provide a more reliable basis for menu design research in the future.

## REFERENCES

- Akis A., Kaya B., & Seferov, R. (2008). The influence of tourism on Alanya and its close environment. In R. Efe, G. Cravins, M. Ozturk, & I. Atalay (eds), *Natural Environment and Culture in the Mediterranean Region* (pp. 377-391). Cambridge: Cambridge Scholars Publishing Inc.
- Aktas, A., Cevirgen, A., & Toker, B. (2010). Tourists' satisfaction and behavioral intentions on destination attributes: An empirical study in Alanya. *Tourism Analysis*, 15(2), 243–252.
- Ariker, C. (2012). Tüketicilerin restoran seciminde kullandıkları secim kriterleri ile demografik özellikleri arasındaki ilişki [The relationship between the restaurant choice criteria of consumers and their demographic characteristics]. *Oneri*, 10(389), 11–31.
- Baiomy, A., & Jones, E. (2016). Measuring menu attributes in the international and local resort hotels in Egypt. *Anatolia*, 27(4), 526-536.
- Baiomy, A.E.A.M., Jones, E., Elias, A.N.E.D., & Dinana, R.T. (2013). Menus as marketing tools: Developing a resort hotel restaurant menu typology. *Journal of Tourism Research & Hospitality*, 2(2), 1-10.
- Barutçu, S., Doğan, H., & Üngüren, E. (2011). Tourists' perception and satisfaction of shopping in Alanya region: A comparative analysis of different nationalities. *Procedia Social and Behavioral Sciences*, 24, 1049-1059.
- Bausch, M. (2017). Getting off menu. *Pizza Today*, 35(3), 32-34.
- Bernstein, D., Ottenfeld, M., & Witte, C. L. (2008). A study of consumer attitudes regarding variability of menu offerings in the context of an upscale seafood restaurant. *Journal of Foodservice Business Research*, 11(4), 398-411.
- Bowen, J. T., & Morris, A. J., (1995). Menu design: Can menus sell? *International Journal of Contemporary Hospitality Management*, 7(4), 4-9.
- Choi, J. G., Lee, B., & Mok, J., (2010). An experiment on psychological gaze motion: A re-examination of item selection behavior of restaurant customers. *Journal of Global Business and Technology*, 6(1), 68-79.
- Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management*, 37(1), 39 – 67.
- Dayan, E., & Bar-Hillel, M., (2011). Nudge to nobesity II: Menu position influences food orders. *Judgment and Decision Making*, 6(4), 333-342.
- DiPietro, R. B., Remar, D., & Parsa, H. G. (2016). Health consciousness, menu information, and consumers' purchase intentions: An empirical investigation. *Journal of Foodservice Business Research*, 19(5), 497–513.
- Dogan, H., Unguren, E., & Barutcu, S. (2012). Russian and German tourist potential and satisfaction in sustainable competitive advantage of Alanya destination. *Tourismos: An International Multidisciplinary Journal of Tourism*, 7(2): 381-399.
- Elo, S., & Kyngas, H. (2007). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107-115.
- Fakih, K., Assaker, G., Assaf, A. G., & Hallak, R. (2016). Does restaurant menu information affect customer attitudes and behavioral intentions? A cross-segment empirical analysis using PLS-SEM. *International Journal of Hospitality Management*, 57, 71–83.
- Feldman, C., Su, H., Mahadevan, M., Brusca, J., & Hartwell, H., (2014). Menu psychology to encourage healthy menu selections at a New Jersey University. *J. Culin. Sci. Technol.* 12(1), 1-21.

- Filimonau, V., & Krivcova, M. (2017). Restaurant menu design and more responsible consumer food choice: An exploratory study of managerial perceptions. *Journal of Cleaner Production*, 143, 516-527.
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24, 105-112.
- Guéguen, N., & Jacob, C. (2012). The effect of menu labels associated with affect, tradition and patriotism on sales. *Food Quality and Preference*, 23(1), 86-88.
- Guéguen, N., Jacob, C., & Ardiccioni, R. (2012). Effect of watermarks as visual cues for guiding consumer choice: An experiment with restaurant menus. *International Journal of Hospitality Management*, 31(2), 617-619.
- Hou, Y., Yang, W., & Sun, Y. (2017). Do pictures help? The effects of pictures and food names on menu evaluations. *International Journal of Hospitality Management*, 60, 94-103.
- Hsieh, H., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Hwang, J., & Lorenzon C. L., (2008). Effective nutrition labeling of restaurant menu and pricing of healthy menu. *Journal of Foodservice*, 19(5), 270-276.
- Jones, P., & Mifli, M., (2001). Menu development and analysis in UK restaurant chains. *Tourism and Hospitality Research*, 3(1), 61-71.
- Kim, E., Ham, S., Yang, I., & Choi, J. (2013). The role of attitude, subjective norm, and perceived behavioral control in the formation of consumers' behavioral intentions to read menu labels in the restaurant industry. *International Journal of Hospitality Management*, 35, 203-213.
- Kincaid, C. S., & Corsun, D. L. (2003). Are consultants blowing smoke? An empirical test of the impact of menu layout on item sales. *International Journal of Contemporary Hospitality Management*, 15(4), 226-231.
- Liu, P. J., Roberto, C. A., Liu, L. J., & Brownell, K. D. (2012). A test of different menu labeling presentations. *Appetite*, 59(3), 770-777.
- Lo, A., King, B., & Mackenzie, M. (2017). Restaurant customers' attitude toward sustainability and nutritional menu labels. *Journal of Hospitality Marketing & Management*, 26(8), 846-867.
- Lockyer, T., (2006). Would a restaurant menu item by any other name taste as sweet? *FUI Hospitality Review*, 24(1), 21-31.
- Mackison, D., Wrieden, W. L., & Anderson, A. S. (2009). Making an informed choice in the catering environment: What do consumers want to know? *Journal of Human Nutrition and Dietetics*, 22(6), 567-573.
- Magnini, V. P., & Kim, S. (2016). The influence of restaurant menu font style, background color, and physical weight on consumers' perceptions. *International Journal of Hospitality Management*, 56, 42-48.
- McCall, M., & Lynn, A. (2008). The effects of restaurant menu item description on perceptions of quality, price, and purchase intention. *Journal of Foodservice Business Research*, 11(4), 439-445.
- Mehrabian, A., & Russell, J. A. (1974). *An Approach to Environmental Psychology*. Cambridge, MA: MIT Press.
- Mills, J. E., & Thomas, L. (2008). Assessing customer expectations of information provided on restaurant menus: A confirmatory factor analysis approach. *Journal of Hospitality and Tourism Research*, 32(1), 62-88.
- Ostrander, D. (2013). Give Your Menu Muscle. *Pizza Today*, 31(12), 18.

- Ottenbacher, M., & Harrington, R. (2013). A case study of a culinary tourism campaign in Germany: Implications for strategy making and successful implementation. *Journal of Hospitality & Tourism Research*, 37(1), 3–28.
- Ozdemir, B., (2012). A review on menu performance investigation and some guiding propositions. *Journal of Foodservice Business Research* 15(4), 378-397.
- Ozdemir, B., & Caliskan, O. (2014). A review of literature on restaurant menus: Specifying the managerial issues. *International Journal of Gastronomy and Food Science*, 2(1), 3-13.
- Ozdemir, B., & Caliskan, O. (2015). Menu design: A review of literature. *Journal of Foodservice Business Research*, 18(3), 189-206.
- Ozdemir, B., Caliskan, O., & Yilmaz, G. (2015). A qualitative study on process aspects of complaining in restaurants. *Journal of Culinary Science & Technology*, 13(4), 330-361.
- Pulos, E., & Leng, K. (2010). Evaluation of a voluntary menu-labeling program in full-service restaurants. *American Journal of Public Health*, 100(6), 1035-1039.
- Reynolds, D., Merritt, E. A., & Pinckney, S. (2005). Understanding menu psychology: An empirical investigation of menu design and customer response. *International Journal of Hospitality and Tourism Administration*, 6(1), 1-9.
- Roberto, C. A., Larsen, P. D., Agnew, M. H., Baik, J., & Brownell, K. D. (2010). Evaluating the impact of menu labeling on food choices. *American Journal of Public Health*, 100(2), 312-318.
- Shoemaker, S., Dawson, M., & Johnson, W. (2005). How to increase menu prices without alienating your customers? *International Journal of Contemporary Hospitality Management*, 17(7), 553-568.
- Smith, D. P. (2013). Just for Looks. *Pizza Today*, 31(12), 44-46.
- Sobol, M. G., & Barry, T. E. (1980). Item positioning for profits: Menu boards at Bonanza International. *The Institute of Management Sciences*, 10(1), 55-60.
- Wansink, B., & Love, K. (2014). Slim by design: Menu strategies for promoting high-margin, healthy foods. *Int. J. Hospitality Manage.* 42, 137–143.
- Wansink, B., Painter, J., & Van Ittersum, K., (2001). Descriptive menu labels' effect on sales. *The Cornell Hotel and Restaurant Administration Quarterly*, 42(6), 68-72.
- Wansink, B., Van Ittersum, K., & Painter, J. E., (2005). How descriptive food names bias sensory perceptions in restaurants. *Food Quality and Preference*, 16(5), 393-400.
- Wiener, S. (2015). The Menu of my Dreams. *Pizza Today*, 33(12), 18.
- Yang, S. S. (2012). Eye movements on restaurant menus: A revisit on gaze motion and consumer scan path. *International Journal of Hospitality Management*, 31(3), 1021-1029.
- Yildirim, F., & Cengel, Ö. (2013). A research over the relationship between fast food consumption and consumer's values & lifestyles in Turkey. *Online Academic Journal of Information Technology*, 4(11), 1–14.
- Yoon, H. J., & George, T. (2012). Nutritional information disclosure on the menu: Focusing on the roles of menu context, nutritional knowledge and motivation. *International Journal of Hospitality Management*, 31(4), 1187– 1194.
- Yuksekbilgili, Z. (2014). Restoran secim olcutleri uzerine bir arastirma [A research on restaurant preferences criteria]. *Journal of Yasar University*, 9(36), 6353–6360.