THE EFFECT OF THE PHYSICAL ENVIRONMENT ON REPEAT PURCHASE IN FAST FOOD RESTAURANTS: A STRUCTURAL MODEL PROPOSAL

Yuliia BOROVSKA[1], Serkan OLGAÇ[2]

[1]Department of Tourism Management, Faculty of Tourism, Osmangazi University, Eskişehir, Türkiye
[2]Department of Tourism Management, Faculty of Tourism, Anadolu University, Eskişehir, Türkiye

ABSTRACT

In this study, it was aimed to investigate the effect of physical environment elements on price perception, customer satisfaction and intention to repeat purchase in fast food restaurants. In the study, decoration, atmosphere, and order factors were used as physical environmental elements. The study included 204 students randomly selected from the Tourism department of a State University. A survey consisting of 29 statements was conducted. The relationship between variables was analyzed using structural equation modeling PLS-SEM. According to the results of the research, it has been determined that the fast-food restaurant environment elements affect the perceived price and customer satisfaction with decoration and layout elements. There was no statistically significant relationship identified between the size of the atmosphere and both the perceived price and customer satisfaction. Additionally, no significant correlation was observed between atmosphere size and the variables of perceived price and customer satisfaction. According to the results, it has been determined that the size of the order has the biggest effect on price and customer satisfaction. Finally, it was concluded that the perceived price and customer satisfaction had an impact on purchase intent.

1. INTRODUCTION

Besides providing food and beverage service to their customers, restaurant businesses also offer a physical environment. One of the essential features in marketing a product is the place where the product is purchased or consumed. In some cases, the physical environment, in other words, the enterprise's atmosphere, may be more effective than the product itself in the purchasing decision. In some cases, the atmosphere may be the main product. The atmosphere is an effort to design purchasing environments to produce specific emotional effects increasing customers' likelihood of purchasing (Kotler, 1973). Therefore, it can be assumed that in a restaurant that is thought to have an impressive atmosphere, the physical environment creates favorable feelings for the customers and increases their satisfaction. Accordingly, the physical environment of the business affects customers significantly.

While the physical environment can effectively share the image of the business with its customers, it can also influence the customer's satisfaction with the service. Environmental conditions such as temperature, ventilation, lighting, noise level, music, odor; the area layout of equipment such as corridors, seating areas, walkways, food service lines, toilets, entrance, and exit doors; and its functionality and physical environment dimensions created by decoration elements such as color, decor, symbol, signage, and objects in the environment can impact customers. Also, the perception and environmental signs created by the service environment on customers are a factor that enables customers to categorize restaurant types and distinguish them from others (Bitner, 1992).

Today's economic conditions, the rapid consumption of daily life, and the busy pace of business life have led people to eat out. With the widespread use of eating out, the fast-food industry has also developed rapidly. In Türkiye, the demand for fast-food restaurants continues to increase. Still, the reasons why consumers prefer to eat in a restaurant are also due to the effect of the physical environment it offers to its customers, apart from the time savings, the price advantage provided by the business, or the understanding of taste. Because people now prefer restaurants that will make them feel happy and satisfied with their environment rather than just meet their needs. Thus, restaurant operators should consider the physical environment and their services to increase customer satisfaction and enable them to buy again.

2. LITERATURE REVIEW

2.1. Objective and Importance of the Study

A physical environment created to attract customers' attention and increase satisfaction in a restaurant business is a crucial factor that provides a competitive advantage in the service sector. For this reason, the physical environment is considered an influential factor in increasing the income and market share of the business (Ryu & Han, 2011). In the fast food context, studies by Chun and Nyam-Ochir (2020) analyze how factors like the atmosphere, service quality, and price perception specifically affect customer revisit intentions and satisfaction, applying the DINESERV model. Their findings show that a comfortable and appealing physical environment significantly contributes to higher satisfaction levels and loyalty among patrons, especially when paired with good food quality and prompt service. This research aims to examine the effects of physical environmental factors in fast food restaurants on price perceptions, satisfaction, and repeat purchase intentions of university students. For this purpose, a survey was administered to students enrolled in the Tourism department at State University.

Within the scope of the study, the students 'reasons for choosing fast food restaurants, their frequency of using fast-food restaurants, the interior design, atmosphere and layout of the restaurant in terms of the physical environmental elements of the restaurants, the students' price perceptions about the business, their satisfaction and repeat purchase intents were observed. There are many studies on the subject in the literature. However, studies on the effects of space perception on university students are limited. In this respect, it is thought that the study will contribute to the literature as an original research.

2.2. Physical Environment

The concept of the physical environment has been defined in different ways by many authors. While it is a physical environment according to Baker (1987), Kotler (1973) defines it as an 'atmosphere.' While Turley and Milliman (2000) describe it as the market environment, Arnold et al. declared it (1996) economic environment. Mathwick et al. as (2001) interactive space, Hutton and Richardson (1995) as health environment, Weinrach (2000) as psychological environment, Bitner (1992) as service scape, Roy and Tai (2003) as store environment, Cronin (2003) as service environment and as social services environment. The concept of the servicescape was first developed by Booming and Bitner (1982). It was defined as an environment where vendors and customers interact regarding the products or services offered (Juhari, et al., 2012). The physical environment for a business refers to the natural and non-social environment created by humans (Kim & Moon, 2009). The physical environment can be adopted to describe the controllable characteristics of a physical environment that can increase and affect certain behaviors leading to the possibility of purchasing on customers (Bitner, 1992; Kotler, 1973).

For a more recent exploration of the "physical environment" concept in service industries, several studies offer insights into how environmental factors influence customer experience, particularly in creating a "servicescape" that shapes customer interactions, satisfaction, and loyalty. Current research has expanded the scope of Bitner's servicescape model by analyzing its impact across diverse sectors, including healthcare and hospitality, where the physical environment heavily influences perceived service quality and customer engagement.

In recent discussions, Kandampully et al. (2023) propose that both physical and technological elements of a servicescape contribute significantly to customer experiences, especially when designed to foster emotional connections. This study emphasizes integrating these elements for a unified approach, termed "experiencescape," to enhance engagement in environments like

restaurants, hotels, and retail spaces. Similarly, research in healthcare services has highlighted the unique attributes of "healthscapes," focusing on how physical layouts and ambient conditions in medical facilities impact patient satisfaction and service perception, underscoring the broader applicability of servicescape concepts across utilitarian and hedonic settings.

These updated frameworks offer a nuanced view of the physical environment in service contexts, linking traditional servicescape theory with emerging elements like technology and patient-centered design to enhance customer and patient experience (An et al., 2023; Han et al., 2018).

2.3. Price Perception

Price is an influential factor in explaining consumer behavior. The price may be perceived variously by the consumers, and the price which is high for some consumers may be low for another. Perceived price can be expressed as evaluating what customers give to obtain the total benefit from the product or service (Zeithaml, 1988). In other words, price perception can be described as the customer's judgment of the average price of service compared to its competitors (Chen et al., 1994). It is accepted that the perceived price is an essential determinant of customers' post-purchase behavior. Perceived price can increase customer satisfaction without affecting the customer's perception of service quality regarding customer behavior. Consequently, it can be assumed that price perception has a significant effect between quality and customer satisfaction (Ryu & Han, 2010). A proper physical environmental quality should be provided to customers to enable them to develop positive price perceptions. Consumer's perception of finding affordable prices in a business primarily depends on product and service prices. Customers will not want to revisit any service provider if they believe the prices for the services offered are unreasonable. Hence, providing customers with a creative and pleasant atmosphere and service quality is crucial to improving their price perception (Han & Ryu, 2009; Ali, et al., 2016).

2.4. Customer Satisfaction

Customer satisfaction is a leading indicator of impact and consumer purchase intentions and loyalty after evaluating the service or product's use (Cadotte, et al., 1987; Farris, et al., 2010). One of the marketing priorities is customer satisfaction. Customer satisfaction has major effects on repeat purchases, expressing positive opinions concerning the business, and customer loyalty. Customers remember the negativity of the servicescape in the restaurant rather than the

problems they experienced about the taste of the food they eat or the service offered to them (Sulek & Hensley, 2004; Han & Ryu, 2009). For current insights on customer satisfaction and its impact on loyalty in restaurants, recent studies emphasize that a positive environment, staff engagement, and personalization are essential. Creating a comfortable, aesthetically pleasing dining space can greatly influence repeat visits, as guests tend to remember environmental factors like decor and lighting, which contribute to their overall satisfaction. This effect is magnified when paired with efficient, friendly service and tailored interactions with staff, which foster an emotional connection with customers and drive loyalty(Zhong & Moon, 2020; Prasetyo et. al., 2021). On the other hand, studies show that the relationship between the physical environment and price perception makes a significant contribution to explaining the impact on satisfaction and loyalty (Özdemir Güzel & Bas, 2020). Accordingly, environmental factors such as color, decor, lighting, music, fragrance aroma, layout, seating comfort, and kitchen design in a restaurant environment can impact customer satisfaction. Ensuring customer satisfaction in a restaurant setting can be effective in returning customers to the restaurant.

2.5. Purchase Intent

Customers consciously or unconsciously observe their physical environment throughout their meal in the restaurant. No matter how delicious the food is, the physical environment will always affect the customer's reaction to the food. Therefore, although the taste and service quality offered is an important element for customers, environmental factors such as decoration, artworks, music, the order in the environment can be very powerful in terms of affecting customers' behavior and satisfaction and determining a customer's intention to visit again (Wakefield & Blodgett, 1996; Han & Ryu, 2009; Spence & Piqueras-Fiszman, 2014). The restaurant environment should be created in a way that meets and affects customer expectations. Thus, atmospheric elements will help attract customers and increase satisfaction in the food and beverage experience. In this context, the loss of attractiveness of a restaurant business will decrease customer satisfaction and negatively affect the intention to visit again (Alonso & O'Neill, 2010; Riley, 1994).

2.6. Model and Hypotheses

There are many studies in the literature on how the customers perceive the environmental factors that make up the restaurant environment. According to Kotler (1973), the elements that make up the physical environment are expressed as four senses-dependent; vision, hearing, smell, and touch. Baker (1986) discussed it in three dimensions and suggested that these are

environment, design, and social factors. Bitner (1992), on the other hand, adopted the concept of servicescape to express the physical environment. Accordingly, servicescape is evaluated in three dimensions: atmosphere, spatial order, and functionality, sign-symbol- artwork . It expresses the atmosphere's dimension in sensory elements such as light, sound, temperature, and smell. Spatial layout and functionality are specified as the technical equipment in the establishment, the design, and the seating group's size. Simultaneously, the sign-symbol-art works are expressed as signs, plates, and artistic objects in space's interior and exterior design. On the other hand, Turley and Milliman (2000) defined the physical environment in five dimensions: the external dimension, the general internal dimension, the establishment and design, the point of purchase and the decoration and the human dimension.

Raajpoot (2002) asserted that the businesses' physical environment dramatically affects customers' perceptions of the business. With the Tangserv scale he developed, he grouped the physical environment into three dimensions: atmosphere, order, and product/service. Unlike the others, Ryu & Jang (2005) with the Dinescape scale they developed, measured the customers' perception by considering only the restaurant environment. The scale consists of six dimensions: Restaurant aesthetics, ambiance, lighting, service materials, service personnel, and seating arrangement. Han & Ryu (2009) proposed three dimensions for the physical environment. These are decoration-works, order, and ambient conditions. They discovered that there are positive relationships between these three dimensions and the value perceived by customers. In his research on luxury restaurants, Ryu (2010) concluded that ambiance, facility aesthetics, lighting, seating arrangement, and service personnel dramatically affect customer satisfaction.

Ariffin, et al., (2012) examined whether the restaurant's physical environment elements are influential on the young customers behaviors with color, lighting, design, and layout dimensions. They also studied the restaurant's surroundings and atmosphere and found that each dimension significantly influenced customer behavior.

In their study on restaurants, Ryu and Han (2010) concluded that the physical environment quality affects customer satisfaction. In the research conducted by Voon (2012) on young customers in fast-food restaurants, it was reported that physical environmental factors affect customer satisfaction. Similarly, Canny (2013) found that the quality of food, service, and physical environment positively affect customer satisfaction and behavioral intentions in his study on restaurants. Han and Hyun (2017) argued in their study for hotel restaurants that

physical environment, service, and food quality affect guests' satisfaction and intentions. Their findings include sufficient power to predict users' intentions for luxury hotel restaurant products.

Han and Ryu (2009) observed that decoration, order, and atmosphere factors positively affect customers' price perceptions, and decoration is the most potent factor in this effect. Customer loyalty is highly dependent on customer satisfaction. In service marketing, a large research group has focused on identifying factors that increase customer satisfaction levels. Studies ultimately reveal that customer satisfaction is strongly influenced by physical environment and price perception (Han & Ryu, 2009; Ariffin, et al., 2012).

Color is one of the leading aesthetic design elements in the restaurant setting due to its high impact on the customer's emotional and behavioral responses. Tantanatewin & Inkarojrit (2018) evaluated 11 computer-generated restaurant environments with different interior colors to investigate the relationship between customers' emotional response to interior color and their decision to enter the restaurant. In the study, pleasure was the best behavioral response predictor. It also pointed that restaurants with warm tones score higher for pleasure.

Farooq (2019) reviewed the relationship between restaurant atmosphere and customer satisfaction in his study on restaurants that offer street flavors, which are becoming popular today. In the study, the restaurant atmosphere's effect on dinner satisfaction was evaluated with its exterior design, spatial layout, color, and light dimensions. As a result, it was determined that exterior design, spatial order, color, and light have a vital relationship with satisfaction. The most significant effect was on the color and exterior design. The colors used on exterior walls, furniture, and even cutlery impacted customer satisfaction.

Wen, et al., (2020) examined background music's effect on customers' perceptions of ethnic restaurants by employing background use and consumer socialization theories in their studies. The results revealed that the harmony between ethnic music and restaurant themes significantly affects perceived originality. Perceived originality has also been found to affect both satisfaction and behavioral intention.

As can be understood, these studies are aimed at evaluating the impact of field perception on customers. Given the growing interest of restaurants in using atmospheric elements to enhance customers' dining experiences: in the studies within the scope of the field perception, it was aimed to reveal the effects of decoration, atmosphere, and order dimensions as physical

environment elements on price perception, customer satisfaction, and customers' repeat purchase intent. Thus, the following hypotheses have been proposed:

H1: Decoration has a positive effect on Perceived Price.

H2: Decoration has a positive effect on Customer Satisfaction.

H3: Atmosphere has a positive effect on Perceived Price.

H4: Atmosphere has a positive effect on Customer Satisfaction.

H5: Business Layout has a positive effect on Perceived Price.

H6: Business Order has a positive effect on Customer Satisfaction.

H7: Perceived Price has a positive effect on Repeat Purchase.

H8: Customer Satisfaction has a positive effect on Repeat Purchase.

To test the hypotheses proposed by the studies in the literature, the model "effect of space perception on repeat purchase" was presented as a research model. The research model is given in Figure 1.
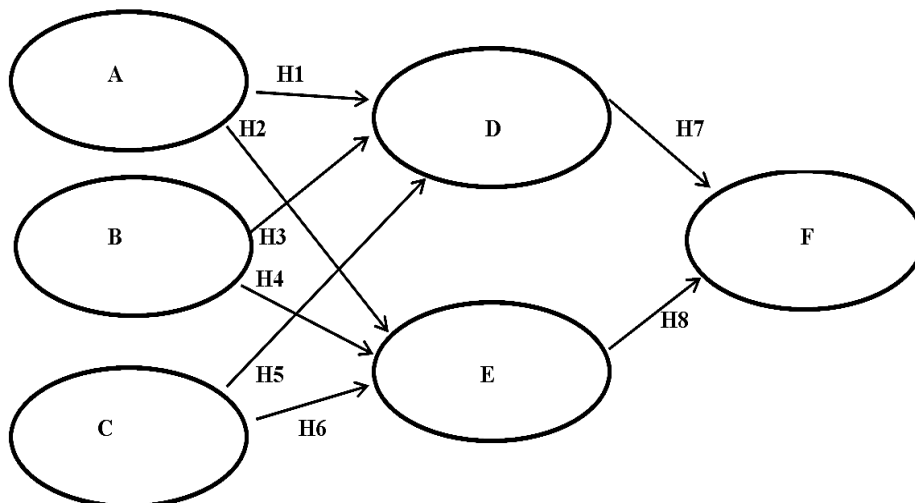
A: Decoration, B: Atmosphere, C: Order, D: Perceived Price, E: Customer Satisfaction, F: Repeat Purchase Intention
Source: Author's construct (based on theoretical framework).
Figure 1. Research Model

To express the physical environment, decoration, restaurant environment, and interior layout dimensions are discussed. In the decoration dimension, statements concerning the interior color,

space design, material quality, and comfort of the sitting group are included. While there are sensory expressions such as smell, noise level, music, color, lighting, climatic conditions, and ventilation in the atmosphere dimension, the spaciousness of the environment, seating capacity, order time, access to other areas in space, and entrance-exit doors were included in the study.

3. MATERIAL AND METHOD

The sample of the study consists of 204 students, who were randomly reached, enrolled in the Tourism Faculty of a State University. The questionnaire was prepared in line with the research by doing a literature review and benefiting from the related studies. The statements in the questionnaire form were prepared using (Bitner, 1992), (Raajpoot, 2002), (Han & Ryu, 2009), and (Ali, et al., 2016) 's studies. The questionnaire applied consists of two parts. In the first part, demographic questions regarding gender, age, the amount of monthly spending for food, the department they study, the class, the reason for choosing fast-food restaurants, and the frequency of eating in the fast-food restaurant are included. In the second part, there are expressions about students' attitudes depending on the physical environment elements of fast-food restaurants. To evaluate the students perceptions in the survey towards fast food restaurants, 5-point Likert-type items (1. Strongly Disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree and 5. Strongly agree) were included.

Table 1.
Factors and Expressions

Factors	Expressions
Decoration	A2: Place design is trendy
	A3: The materials used are of good quality
	A4: The chair and / or sitting group is comfortable
Atmosphere	B9: Lighting is sufficient
	B10: The temperature is not uncomfortable
	B11: Ventilation is sufficient
Order	C12: Makes me feel spacious
	C14: Suitable for easy movement
	C15: Orders are not delayed even if it is crowded
Perceived Price	D19: I think the price is affordable compared to other restaurants
	D20: I think the price I paid meets the service offered
	D21: I think the price I paid is appropriate for the service I received
Customer Satisfaction	E23: The atmosphere of the restaurant is attractive to me
	E24: I like to come to a fast food restaurant, although there are other options
	E25: I think I made the right decision by choosing a fast food restaurant
Repeat Purchase Intention	F27: I plan to eat regularly at a fast food restaurant
	F28: I recommend to others
	F29: I'll come again to eat

Partial least squares structural equation modeling (PLS-SEM) was applied to test the research model's causal relationships in line with the survey data. The data were analyzed using the SmartPLS 3.0 statistics program. SmartPLS is software with a graphical user interface for variance-based structural equation modeling using the partial least squares path modeling method, which is preferred by more and more researchers in social sciences. SmartPLS is a

milestone in latent variable modeling, according to Joe F. Hair. It combines the most advanced methods with an easy-to-use and intuitive graphical user interface (smartpls.com, 2020).

PLS-SEM estimates the parameters of a series of equations in a structural equation model by combining principal component analysis with regression-based path analysis (Mateos-Aparicio, 2011) PLS-SEM enjoys widespread popularity in various disciplines, including accounting, group and organization management, hospitality management, international management (Sarstedt, et al., 2017). The main reason for PLS-SEM's attractiveness is that the method enables the estimation of very complex models with many structure and indicator variables. Also, PLS-SEM generally allows for flexibility in data requirements and the determination of relationships between structures and indicator variables. It is considered a flexible modeling approach where strong assumptions (regarding distributions, sample size, and scale of measurement) are not required. In other words, it is possible to create a model in cases where the sample size is not sufficient, or the normality assumption cannot be achieved. It is considered an exploratory approach rather than a confirmatory (Fornell & Bookstein, 1982; Esposito Vinzi, et al., 2010).

4. RESEARCH FINDINGS

4.1.Descriptive Statistics

Among the students from the State University Tourism Faculty who participated in the study, 53.4% are male, while 46.6% are female. In terms of age distribution, 37.7% of the students are under 21 years old, and 62.3% are 21 years old or older. While 29.9% of the students participating in the research spend 400 TL and 600 TL for food, 53.4% spend 400 TL or less. 16.7% of the students spend more than 600 TL. 37.7% of the participants are tour guiding students, 31.4% gastronomy and culinary arts, and 30.9% are tourism management department students. 20.6 of the students are the first year, 25.5 are the second year, 32.8 are the third year, and 21.1 are fourth-year students. In terms of the frequency of eating at a fast-food restaurant, 47.1% of the students stated that they went to the restaurant 1-2 times a week, and 26.6% indicated that they went to the restaurant 3-4 times. While 9.8% never go to fast-food restaurants, 8.3% of them go more than six times a week. Students' priority reasons to prefer fast food restaurants are taste with 30.4% and price factors with 30.4%.   The second most important reason for the preference was quality with 23.5%. In comparison, the third most crucial reason was service speed with 20.6%. According to these results, while taste and price are at the forefront for students, quality and service speed are other reasons for preference. On the other hand, the restaurant environment remains low with 7.8% priority, while the second

most essential preference reasons are after quality and price with 16.2%. Accordingly, the environment may have an impact on students' preferences for fast food restaurants. For the reliability of the scale, the Cronbach Alpha value was calculated and found to be 0.933. An alpha value greater than 0.70 indicates that the internal consistency of the questionnaire's expressions is sufficiently high (Yılmaz, et al., 2019).

4.2. Data Analysis

The data in the study were analyzed using the PLS-SEM technique. The measurement model fits the structural equation model in the review, and the last hypothesis test results are given.

4.2.1. *The Validity of the Measurement Model*

The Smart PLS (Partial Least Squares) program was used to test the study's relevant hypotheses. Before testing the research model, the latent relationships of the statements in the questionnaire form and the general validity and reliability of the model should be examined. The average variance (AVE) values explained for the latent structures' validity should be above 0.50 (Fornell & Larcker, 1981). For scale reliability, if the convergence validity (CR) is above 0.7, it is reliable (Bagozzi & Yi, 1988). The structure reliability and validity test results regarding the research criteria are given in Table 2.

Table 2.
Construct Reliability and Validity

	Cronbach's Alpha(CA)	Composite Reliability (CR)	Average Variance Extracted (AVE)
A	0.781	0.873	0.697
B	0.752	0.858	0.668
C	0.721	0.843	0.643
D	0.883	0.928	0.812
E	0.821	0.894	0.738
F	0.866	0.917	0.788

A: Decoration, **B:** Atmosphere, **C:** Order, **D:** Perceived Price, **E:** Customer Satisfaction, **F:** Repeat Purchase Intention

According to the results, Cronbach Alpha coefficients of all structures were calculated over 0.70. CR coefficients are also between 0.843 and 0.928. All AVE values are greater than 0.50. With these values, it is observed that the required structure reliability and validity are provided. To ensure the measurement model's discriminant validity, each structure's AVE value's square root should be higher than the correlations between the structures in the survey (Fornell & Larcker, 1981). Related results are included in Table 3.

The diagonal values in Table 3 are the square root values of the AVE value. According to these values, it is understood that the explained square root of the mean-variance (AVE) of each structure is higher than the correlation coefficients between latent variables other than diagonal.

In other words, each AVE square root value is greater than the values of the row and column it is in. The separation validity of the model is provided according to these results.

Table 3.
Discriminant Validity

	A	B	C	D	E	F
A	**0.835**					
B	0.538	**0.818**				
C	0.599	0.649	**0.802**			
D	0.496	0.358	0.542	**0.901**		
E	0.579	0.392	0.565	0.592	**0.859**	
F	0.320	0.245	0.438	0.567	0.660	**0.888**

4.2.2. Evaluation of the Structural Model

Fit Criteria

After evaluating the validity and reliability of the measurement model in the study, SEM is considered. SEM R2, effect size f2, path coefficient, t-value, and the goodness-of-fit index (GOF) are evaluated. Besides, the measurements calculated by the Smart PLS 3 software are used for the fit of the model, Standardized Root Mean Square Residual SRMR, Normed Fit Index (NFI) values are used.

The size of the R2 values is essential in determining the accuracy of the predicted values. When the R2 values for the model are examined, the perceived price, customer satisfaction, and purchase Intent are calculated as 0.332, 0.403, and 0.478, respectively. In line with these results, it can be assumed that the study's internal latent variables have a moderate explanation rate (Chin, 1998; Henseler, et al., 2009).

f2 (effect size), when an external latent variable is removed from the model, the change in R2 value is used to assess whether that extracted structure has a significant effect on the intrinsic latent variables. The effect measure f2 predicts that a latent variable has a weak (0.02< f2 <0.14), moderate (0.15 f2 0.34) and high (f20.34) effect at the structural level (Cohen, 1988). In reporting the effect size, researchers must interpret the effect size they obtain and compare it with the effect size values obtained in studies on the same subject (Kline, 2004; Henson, 2006). Reporting and interpretation of effect sizes in academic studies are not widely used yet. Thus, it was not possible to compare the results obtained in the study with similar studies. According to the f2values obtained as a result of the analysis: A external latent variable; D (0.07) weak, E (0.154) medium B external latent variable; (0.003) weak, E (0.004) weak, C

external latent variable; D (0.128) weak, E (0.114) weak, D and E affect the internal latent variable F (0.092) weak and (0.314) moderate, respectively.

As PLS-SEM is not a general fit index, the goodness of fit index (GOF) was proposed by Tenenhaus, et al., (2004) to measure the goodness of fit. The GOF index was developed to determine both the measurement and structural models' performance and provide a standard measure for the model's predictive performance. The GOF index takes values between 0 and 1. The compliance degrees of the GOF index are GOF <0.10 (little), 0.10 GOF 0.25 (medium), 0.25 GOF 0.36 (good) GOF 0.36 (very good) (Wetzels, et al., 2009). The GOF index is obtained by taking the square root of the product of the mean of the AVE and R 2 values obtained for latent variables. The GOF index was calculated as 0,54 (1). This result shows that the model has a very good fit.

$$GoF = \sqrt{Mean(R^2) \times Mean(AVE)} = 0,54 \ (1)$$

For the model to have an acceptable fit, the SRMR value is required to take a value less than 0.10. SRMR value for the model was calculated as 0.073. NFI value is requested to take values between 0 and 1. NFI's value close to 1 shows that the model has a good fit. For the model in the study, NFI was calculated as 0.864.

Eventually, it should be determined whether there is collinearity between the latent variables in evaluating the model. Thus, VIF (variance inflation factor) values are examined. VIF value less than 5 shows no collinearity between variables (Hair, et al., 2011). Since the calculated VIF values are between 1.541 and 2.039, it can be assumed that there is no problem with multiple internal relationships between latent variables.

Relationship Coefficients and Hypothesis Testing

The research model in Figure 1 was analyzed by PLS-SEM. Results are given in Figure 2.

A one-unit increase in decoration taste in the model causes a rise of 0.28 units on the perceived price and an increase of 0.39 units on customer satisfaction. A one-unit increase in the order's size causes an increase of 0.41 units in perceived price and an increase of 0.37 units on satisfaction. There is no significant relationship between the atmosphere and perceived price, and customer satisfaction. It has been determined that there is a causal relationship between perceived price and customer satisfaction, and purchasing intent. Accordingly, a one-unit

increase in perceived price causes an increase of 0.27 units in purchasing Intent. A one-unit increase in customer satisfaction causes an increase of 0.50 units in purchase Intent.
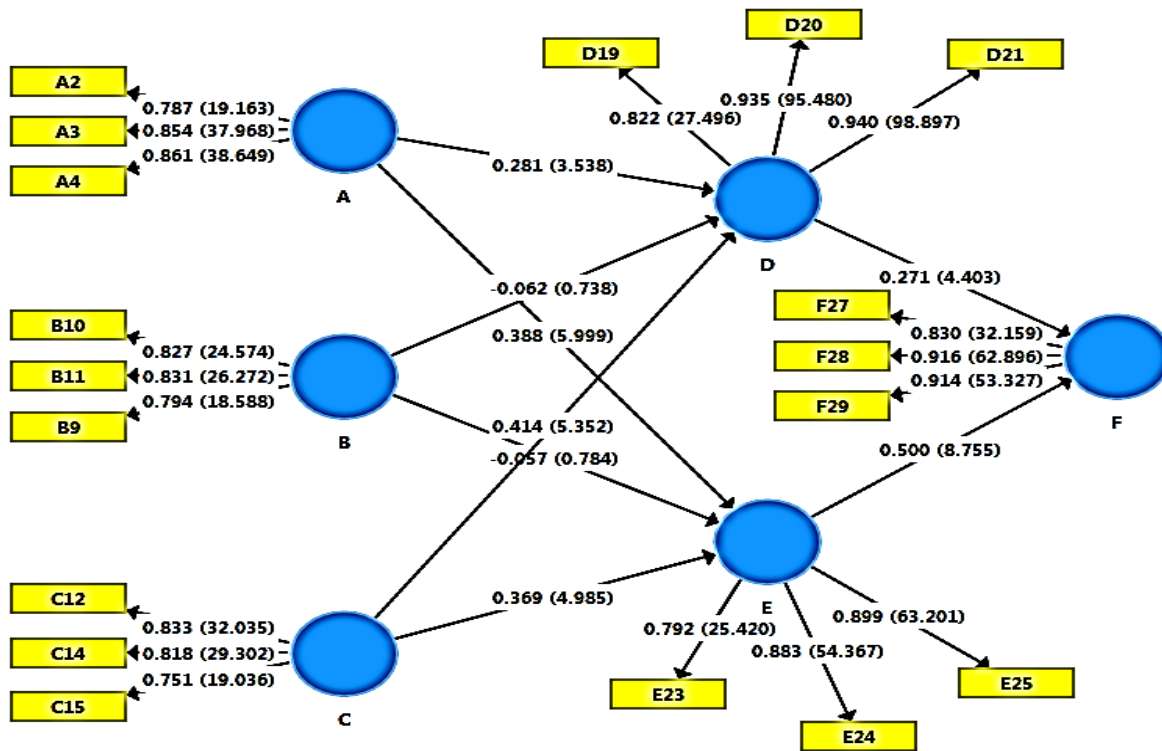
A: Decoration, B: Atmosphere, C: Order, D: Perceived Price, E: Customer Satisfaction, F: Repeat Purchase Intention

Figure 2. PLS-YEM Structural Model

Among the latent variables in the structural model, there are direct effects as well as indirect effects. It has been concluded that decoration has a slight impact on the purchase intent over the perceived price (0.076). The effect of the order on perceived price on purchase intent was determined (0.112). According to the other indirect effect in the model; decoration impacts purchasing intent through customer satisfaction (0.194). Finally, the order has an indirect effect on purchasing intent through customer satisfaction (0.185).

According to the PLS-SEM results applied to the measurement model, the structural model has significant relationships, except that some have been reached. Therefore, to evaluate the PLS path coefficients' significance, Bootstrapping analysis was performed on the model, and the hypotheses were tested.

According to the results, H1, H2, H5, H6, H7, H8 hypotheses were supported, while H3 and H4 hypotheses were not. When the values are examined, it is understood that the decoration dimension affects the perceived price and customer satisfaction at a 1% significance level. Layout dimension, like decoration, affects the perceived price and customer satisfaction.

However, it has been determined that the atmosphere has no significant effect on perceived price and customer satisfaction. Finally, considering the effect of perceived price and customer satisfaction on purchase intent, it is concluded that the relationship between them is significant.

5. CONCLUSIONS

In this study, the effects of students' physical environment in fast food restaurants on perceived price, customer satisfaction, and repeat purchase intent were observed. The decoration, atmosphere, and order factors that compose the physical environment elements of fast restaurants within the physical environment scope are included in the study. The research model was prepared using the studies in the literature and analyzed using PLS-SEM. The data were obtained by applying a questionnaire to 204 randomly selected students at State University Faculty of Tourism. While the primary reasons for the students participating in the study to prefer fast-food restaurants were taste and price, it was observed that the restaurant environment was also the reason for preference. A great majority of students (90.2%) go to a fast-food restaurant at least once a week. According to this ratio, it can be assumed that students have a strong customer potential for fast food restaurants.

The results revealed some important findings: The first one is the influence of decoration and layout. Decoration elements such as interior design, material quality and seating comfort significantly influenced both perceived price and customer satisfaction. The layout of the restaurant, including spaciousness and efficiency in order processing, is also a critical factor influencing these perceptions. In particular, order size had the greatest impact on both perceived price and customer satisfaction, emphasizing the importance of an organized and efficient environment in enhancing the customer experience.

On the other hand, atmosphere has important, albeit limited, effects. Contrary to expectations, atmospheric factors such as lighting, temperature and ventilation did not show a significant relationship with perceived price or customer satisfaction. However, this finding suggests that atmospheric factors, although important, may not be as effective as other physical environmental factors in the context of fast food restaurants.

Regarding the relationship between perceived price and customer satisfaction as factors of repurchase intention, both perceived price and customer satisfaction were found to have a positive effect on repurchase intention. The fact that customer satisfaction has a stronger effect on repurchase intention than perceived price suggests that although price is a factor to be

considered, overall satisfaction with the dining experience plays a more important role in increasing customer loyalty. This has practical implications for restaurant operators. Fast food restaurant operators should focus on improving the design and layout of their establishments to improve customers' perceptions of price and satisfaction. Providing a comfortable and aesthetically pleasing environment can attract customers and encourage repeat visits. Moreover, offering competitive prices and maintaining a high service quality-price ratio can further strengthen customer loyalty.

The results achieved are similar to existing studies. In the studies of Han & Ryu (2009) it was determined that decoration positively affects customers' price perceptions. Han and Hyun (2017) stated in their study that the physical environment affects guests' satisfaction and intentions. In the study of Farooq (2019), it was found that spatial order has an essential relationship with satisfaction. Similarly, Ariffin et al., (2012) stated in their study that the color, lighting, design and layout elements in the restaurant affect on the young customers' behavior.

This study contributes to the existing body of knowledge by providing insights into the specific preferences and behaviors of young customers, especially university students, in the fast food restaurant context. It highlights the changing importance of different physical environmental factors and their impact on key customer perceptions and behaviors. The study is limited to a specific demographic group (university students) and a specific type of restaurant (fast food), which may limit the generalizability of the findings. Future research could expand the scope to include different customer profiles and different types of dining establishments to confirm and extend the findings. Further exploration of the role of atmospheric elements and other potentially influential factors such as technological innovations and personalized service could provide a more comprehensive understanding of the determinants of customer satisfaction and loyalty in the restaurant industry.

In conclusion, this study highlights the critical role of physical environment factors in shaping customer perceptions and behaviors in fast food restaurants. Decoration elements such as the restaurant design's fashion, the quality of the materials used, and the seating comfort positively affect the students' price perceptions and satisfaction. By strategically focusing on key elements such as decoration and layout, restaurant operators can increase customer satisfaction and encourage repeat purchase intentions, thereby gaining a competitive advantage in the fast food industry. Similarly, the restaurant's interior layout being spacious so to move easily, and the service time is short even when the restaurant is busy, affects the students' price perceptions

and satisfaction. While students attach importance to decoration and order in the fast-food restaurant environment, they are not affected by atmospheric elements such as lighting, temperature, and ventilation. According to these results, to evaluate the customer potential of fast-food restaurant operators, the design of the space, the comfort and convenience of the furniture to be used, and the fact that the restaurant interior layout does not restrict the movements of the customers and makes them feel comfortable may be effective in increasing their attractiveness. On the other hand, it has been observed that price perception and customer satisfaction affect repeat purchasing intent. The fact that the operators offer more affordable prices than other restaurants and develop strategies to increase the service quality/price ratio can positively affect the customers' purchasing intents.

Understanding the effects of the physical environment on repeat purchases in fast-food restaurants through a structural model provides valuable insights for business strategies. By focusing on enhancing the physical atmosphere, ensuring high food quality, and delivering excellent service, restaurants can significantly improve customer satisfaction and foster loyalty, ultimately leading to increased repeat purchases. This integrated approach not only benefits customers but also contributes to the competitive advantage of fast-food establishments in a crowded market. There are similar studies in the literature. Still, the number of studies applied to young customers within the scope of fast-food restaurants is limited. In this respect, it is considered that the study will contribute to the literature with a different perspective. The study was conducted on a limited number of people. More comprehensive studies can be done according to various restaurant types, customer profiles, and spatial differences. Thus, it will be possible to reach results for different populations.

REFERENCES

Ali, F., Amin, M., & Ryu, K. (2016). The Role of Physical Environment, Price Perceptions, and Consumption Emotions in Developing Customer Satisfaction in Chinese Resort Hotels. Journal of Quality Assurance in Hospitality & Tourism, 17(1), 45-70. https://doi.org/10.1080/1528008X.2015.1016595

Alonso, A. D., & O'Neill, M. A. (2010). Consumers' ideal eating out experience as it refers to restaurant style: A case study. Journal of Retail & Leisure Property, 9(4), 263-276. https://doi.org/10.1057/rlp.2010.9

An, S. Pyoungsoo L. & Choong Ho S. (2023). Effects of Servicescapes on Interaction Quality, Service Quality, and Behavioral Intention in a Healthcare Setting. *Healthcare* 11(18), 2498. https://doi.org/10.3390/healthcare11182498

Ariffin, F. H., Bibon, F. M., & Raja Abdullah, R. P. (2012). Restaurant's Atmospheric Elements: What The Customer Wants. Procedia-Social and Behavioral Sciences, 38, 380-387. https://doi.org/10.1016/j.sbspro.2012.03.360

Arnold, S.J., Handelman, J., & Tigert, D.J. (1996). Organizational Legitimacy and Retail Store Patronage, Journal of Business Research. 35(3), 229-39

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 16, 74-94. https://doi.org/10.1007/BF02723327

Baker, J. (1986). The role of the environment in marketing services: The consumer perspective. Chicago: American Marketing Association.

Bitner, M. J. (1992). Servicescapes: The Impact of Physical Surroundings on Customer and Employees. Journal of Marketing(56), 57-71. https://doi.org/10.2307/1252042

Booms, B. H., & Bitner, M. J. (1982). Marketing Services by Managing the Environment. Cornell Hotel and Restaurant Administration Quarterly, 23(1), 35-40. https://doi.org/10.1177/001088048202300107

Cadotte, E. R., Woodruf, R. B., & Jenkins, R. L. (1987). Expectation and norms in models of customer satisfaction. Journal of Marketing Research, 24, 305-314. https://doi.org/10.2307/3151641

Canny, I. (2013). The Role Of Food Quality, Service Quality, And Physical environment On Customer Satisfaction And Future Behavioral İntentions In Casual Dining Restaurant. The 7th National Research Management Conference. Palembang, Indonesia: Sriwijaya University. https://doi.org/10.2139/ssrn.2363339

Chen, L. J., Gupta, A., & Rom, W. (1994). A study of price and quality in service operations. International Journal. International Journal of Service Industry Management, 5(2), 23-34. https://doi.org/10.1108/09564239410057663

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. G. A. Marcoulides, Modern methods for business research (s. 295-358). Mahwah: NJ: Lawrence Erlbaum Associates.

Chun, Se-Hak, and Ariunzaya Nyam-Ochir. 2020. "The Effects of Fast Food Restaurant Attributes on Customer Satisfaction, Revisit Intention, and Recommendation Using DINESERV Scale" *Sustainability* 12(18), 7435. https://doi.org/10.3390/su12187435

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2 b.). Hillsdale, NJ: Erlbaum.

Cronin, J. (2003). Looking back to see forward in services marketing: Some ideas to consider. Journal of Marketing, 54, 5– 131. https://doi.org/10.1108/09604520310495813

Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). PLS Path Modeling: From Foundations to Recent Developments and Open Issues for Model Assessment and Improvement. Handbook of Partial Least Squares. Verlag Berlin, Heidelberg: Springer Handbooks of Computational Statistics. https://doi.org/10.1007/978-3-540-32827-8_3

Farooq, S. (2019). Impact of Ambience on Dinners' Satisfaction in Food Street Restaurants: A Widening Horizon in the World. Orient Research Journal of Social Sciences, 4(2), 229-240. https://doi.org/10.13189/cea.2020.080433

Farris, P. W., Bendle, N. T., Pfeifer, P. E., & Reibstein, D. J. (2010). Marketing Metrics: The Definitive Guide to Measuring Marketing Performance (Second Edition b.). Upper Saddle River, New Jersey: Pearson Education, Inc.

Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. Journal of Marketing Research, 19, 440–452. https://doi.org/10.2307/3151718

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research, 18(1), 39-50. https://doi.org/10.2307/3151312

Hair, J. F., Christian, M. R., & Sarstedt , M. (2011). PLS-SEM: Indeed a Silver Bullet. The Journal of Marketing Theory and Practice, 19(2), 139-152. https://doi.org/10.2753/MTP1069-6679190202

Han, H., & Hyun, S. (2017). Impact of hotel-restaurant image and quality of physical-environment, service, and food on satisfaction and intention. International Journal of Hospitality Management, 63, 82-92. https://doi.org/10.1016/j.ijhm.2017.03.006

Han, Jieun, Hyo-Jin K. & Gyu H. K. (2018). A Systematic Underpinning and Framing of the Servicescape: Reflections on Future Challenges in Healthcare Services. International Journal of Environmental Research and Public Health 15, no. 3: 509. https://doi.org/10.3390/ijerph15030509

Han, H., & Ryu, K. (2009). The Roles Of The Physical Environment, Price Perception, and Customer Satisfaction in Determining Customer Loyalty in The Restaurant İndustry. Journal Of Hospitality & Tourism Research, 33(4), 487-510. https://doi.org/10.1177/1096348009344212

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. Advances in International Marketing (Vol 20, s. 277-319). Bingley: Emerald Publishing Limited. https://doi.org/10.1108/S1474-7979(2009)0000020014

Henson, R. K. (2006). Effect size measures and meta-analytic thinking in counseling psychology research. The Counseling Psychologist, 34, 601-629. https://doi.org/10.1177/0011000005283558

Hutton, J. D., & Richardson, L. D. (1995). Healthscapes: The Role of the Facility and Physical Environment on Consumer Attitudes, Satisfaction, Quality Assessments, and Behaviors. Health Care Management Review, 20, 48-61. https://doi.org/10.1097/00004010-199502020-00008

Juhari, H., Ali, M., & Khair, N. (2012). The Shopping Mall Servicescape Affects Customer Satisfaction. 3rd International Conference on Business and Economic Research. Bandung, Indonesia.

Kandampully, J., Bilgihan, A. & Amer, S.M. (2023). Linking servicescape and experiencescape: creating a collective focus for the service industry. Journal of Service Management, Vol. 34 No. 2, pp. 316-340. https://doi.org/10.1108/JOSM-08-2021-0301

Kim, W. G., & Moon, Y. J. (2009). Customers' cognitive, emotional, and actionable response to the servicescape: A test of the moderating effect of the restaurant type. International Journal of Hospitality Management, 28, 144-156. https://doi.org/10.1016/j.ijhm.2008.06.010

Kline, R. B. (2004). Beyond significance testing: Reforming data analysis methods in behavioral research. Washington, DC: American Psychological Association. https://doi.org/10.1176/appi.ajp.162.3.643-a

Kotler, P. (1973). Atmospherics as a Marketing Tool. Journal of Retailing, 49(4), 48-64.

Mateos-Aparicio, G. (2011). Partial least squares (PLS) methods: Origins, evolution, and application to social sciences. Communications in Statistics – Theory and Methods, 40(13), 2305-2317. https://doi.org/10.1080/03610921003778225

Mathwick C, Malhotra NK, Rigdon E (2001) Experiential value: Conceptualization, measurement and application in the catalog and internet shopping environment. Journal of Retailing 77(1), 39–56. https://doi.org/10.1016/s0022-4359(00)00045-2

Özdemir Güzel, S., & Bas, Y. N. (2020). Understanding the Relationship Between Physical Environment, Price Perception,Customer Satisfaction and Loyalty in Restaurants. Journal of Tourism and Gastronomy Studies, 2020, 8 (2), 762-776. doi:10.21325/jotags.2020.577

Prasetyo, Y.T.; Castillo, A.M.; Salonga, L.J.; Sia, J.A.; Chuenyindee, T.; Young, M.N.; Persada, S.F.; Miraja, B.A.; Redi, A.A.N.P.(2021). Factors Influencing Repurchase Intention in Drive-Through Fast Food: A Structural Equation Modeling Approach. Foods. 10, 1205. https://doi.org/10.3390/foods10061205

Raajpoot, N. (2002). Tangserv: a multiple item scale for measuring tangible quality in food service industry. Journal of Foodservice Business Research, 5(2). https://doi.org/10.1300/J369v05n02_08

Riley, M. (1994). The influence of social culture and innovation. British Food Journal, 96(10), 15-18. https://doi.org/10.1108/00070709410072463

Roy, A., & Tai, S. T. (2003). Store environment and shopping behavior: the role of imagery elaboration and shopping orientation. Journal of International Consumer Marketing, 15(3), 71-99. https://doi.org/10.1300/J046v15n03_05

Ryu, K. (2010). The Influence Of Dining Environmental Perceptions On Behavioral Intentions Through Customer Satisfaction in The Upscale Restaurant Context. Annual Conference proceedings of research and academic papers, (s. 185-203.). Catalina İsland, Mexico.

Ryu, K., & Han, H. (2010). Influence of the Quality of Food, Service, and Physical Environment on Customer Satisfaction and Behavioral Intention in Quick-Casual Restaurants: Moderating Role of Perceived Price. Journal of Hospitality & Tourism Research, 34(3), 310-329. https://doi.org/10.1177/1096348009350624

Ryu, K., & Han, H. (2011). New or Repeat Customers: How Does Physical Environment Influence Their Restaurant Experience? International Journal of Hospitality Management, 30(3), 599-611. https://doi.org/10.1016/j.ijhm.2010.11.004

Ryu, K., & Jang, S. (2005). A multiple item scale for measuring the physical environment in upscale restaurants. Proceedings of the 2005 Asia Pacific Tourism Association (APTA) Annual Conference. Goyang, Korea.

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial Least Squares Structural Equation Modeling. C. Homburg, M. Klarmann, & A. Vomberg, Handbook of Market Research (s. 1-40). Springer, Cham. https://doi.org/10.1007/978-3-319-05542-8_15-1

smartpls.com. (2023). SmartPLS: http://www.smartpls.com (5 10, 2023)

Spence, C., & Piqueras-Fiszman, B. (2014). The Perfect Meal:The multisensory science of food and dining. John Wiley & Sons, Ltd.

Sulek, J. M., & Hensley, R. L. (2004). The Relative Importance of Food, Atmosphere, and Fairness of Wait: The Case of a Full-service Restaurant. The Cornell Hotel and Restaurant Administration Quarterly, 45(3), 235-247. https://doi.org/10.1177/0010880404265345

Tantanatewin, W., & Inkarojrit, V. (2018). The influence of emotional response to interior color on restaurant entry decision. International Journal of Hospitality Management, 69, 124-131. https://doi.org/10.1016/j.ijhm.2017.09.014

Tenenhaus, M., Amato, S., & Esposito Vinzi, V. (2004). A global goodness-of-fit index for PLS structural equation. In: Proceedings of the XLII SIS scientific meeting, (s. 739-742).

Turley, L. W., & Milliman, R. E. (2000). Atmospheric Effect on Shopping Behavior. A Review of the Experimental Evidence. Journal of Business Research, 49(2), 193-211. https://doi.org/10.1016/S0148-2963(99)00010-7

Voon, B. H. (2012). Role of Service Environment for Restaurants: The Youth Customers' Perspective. Procedia - Social and Behavioral Sciences, 38, 388–395. https://doi.org/10.1016/j.sbspro.2012.03.3

Wakefield, K. L., & Blodgett, J. G. (1996). The effect of the servicescape on customers' behavioral intentions in leisure service settings. Journal of Services Marketing, 10(6), 45–61. https://doi.org/10.1108/08876049610148594

Weinrach, J. (2000). Environmental psychology: Why should we care? Environmental Quality Management, 10, 83–86.

Wen, H., Leung, X., & Pongtornphurt, Y. (2020). Exploring the impact of background music on customers' perceptions of ethnic restaurants: The moderating role of dining companions. Journal of Hospitality and Tourism Management, 43, 71-79. https://doi.org/10.1016/j.jhtm.2020.02.007

Wetzels, M., Odekerken-Schröder, G., & van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. MIS Quarterly, 33(1), 177-195. https://doi.org/10.2307/20650284

Yılmaz, V., Can, Y., & Aras, N. (2019). Investigation of Attitude About Nuclear and Renewable Energy by Using Partial Least Squares Structural Equation Modeling. Alphanumeric journal, 7(1), 87-102. https://doi.org/10.17093/alphanumeric.460563

Zeithaml, V. (1988). Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing. 52. 2-22., 52, 2-22. https://doi.org/10.2307/1251446

Zhong, Y., & Moon, H.C. 2020. "What Drives Customer Satisfaction, Loyalty, and Happiness in Fast-Food Restaurants in China? Perceived Price, Service Quality, Food Quality, Physical Environment Quality, and the Moderating Role of Gender" Foods 9, no. 4: 460. https://doi.org/10.3390/foods9040460

Yuliia BOROVSKA

ORCID: 0000-0001-8814-8082

CONTACT DETAILS	BIOGRAPHY
juli94borovska@gmail.com	After completing my bachelor's degree with honors in Tourism Management at Ivan Franko National University of Lviv, I pursued a master's degree at Anadolu University in Turkey. Currently, I am continuing my Tourism Management PhD studies at Eskişehir Osmangazi University. My research focuses on gastronomy and digitalization, particularly on the intersection of these two fields. Additionally, I work on educational technologies and digitalization, exploring how they can be applied to tourism education.

Lecturer Serkan OLGAÇ

ORCID: 0000-0002-9539-9055

CONTACT DETAILS	BIOGRAPHY
solgac@anadolu.edu.tr	The author completed his undergraduate education at Anadolu University, Department of Statistics. He received his master's degree from Eskişehir Osmangazi University, Institute of Science and Technology, Department of Applied Statistics. He is currently working as a lecturer in the field of statistics at Anadolu University, Faculty of Tourism.