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ADVANCES IN GLOBAL SERVICES AND RETAIL MANAGEMENT

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## Customer Perceptions Against COVID-19 Precautionary Measures of the Restaurants: The Case of Istanbul, Turkey

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### Abstract

The research was conducted to determine consumer perceptions of the measures that restaurants should take during the COVID-19 outbreak. Restaurant measures observed by individuals who went to a restaurant at least once during the outbreak were identified. Meanwhile, new additional measures developed by the researcher were determined by the participants, and suggestions were developed for the implementation of the restaurants. The research was conducted in Istanbul, Turkey. The data were collected through a questionnaire in the research where the quantitative research method was preferred. 388 questionnaires in total were included in the study and analyzed. Analyses were performed with the SPSS software. Frequency analysis, t-test, and ANOVA test were used in the study. It was found that perceptions of hygiene and safety measures taken in restaurants did not differ according to the demographic characteristics of the participants as a result of the research. Meanwhile, it was found that the level of importance of hygiene and safety measures that restaurants should take did not differ according to the demographic characteristics of the participants. Some suggestions have been developed according to the results obtained.

**Keywords:** COVID-19 outbreak, food safety, hygiene

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### Introduction

COVID-19 is an outbreak that originated in Wuhan, China, and then spread rapidly around the world (Zhang et al., 2020). Many countries have taken various measures due to the rapid spread of the disease, deaths, and the lack of treatment (Baghchechi, 2020). Closing the restaurants for a while is one of these measures. It is thought in the event of restaurants reopening that customer demands will decrease due to the fear and anxiety of individuals about the outbreak (Mertens et al., Tse, 2016). Restaurants need to comply with a number of measures in order to protect the health of both customers and employees and to prevent declines in demands by creating a security perception in individuals for this reason. The Ministry of Health of the Republic of Turkey has prepared a “COVID-19 Outbreak Management and Working Guide” (2020) for this reason. This prepared guide includes measures to be followed by businesses providing food and beverage services.

This research aims to determine consumer perceptions of these measures that restaurants should take during the COVID-19 outbreak. The restaurant measures observed by individuals who went

to a restaurant at least once during the outbreak period were determined within the scope of this purpose. It was also revealed to what extent restaurants comply with the measures in this way. Meanwhile, new additional measures developed by the researcher were determined by the participants, and suggestions were developed for the implementation of the restaurants. It will be possible to protect the health of customers and employees as a result of the implementation of the recommendations. In addition, a safe restaurant perception can be created in the minds of customers to prevent a decrease in demand. The study is considered important due to these benefits.

## **Literature Review**

Individuals' perception of risk related to restaurants affects the status of going to restaurants. Consumers have interpreted the closure of restaurants due to the COVID-19 outbreak that food consumption in these areas may be risky. The understanding of cooking and consuming at home instead of eating in the restaurant has become widespread for this reason. It is thought that risk perceptions of individuals increase especially due to the limited information about the disease at the beginning of the outbreak (Byrd et al., 2021:1,2). Individuals who think restaurants meet hygiene and safety measures will be less concerned (Knight et al., 2009: 472). These individuals maintain the behavior of going to restaurants. Therefore, it is important that restaurants comply with the measures prepared for the COVID-19 outbreak.

Measures to be taken in restaurants can be considered in four basic categories. These categories are mask use, social distancing, hand hygiene, and temperature measurement.

### ***Mask Use***

COVID-19 is a respiratory disease outbreak (Soetikno et al., 2020; Howard et al., 2020: 1). It is important to use masks to prevent the spread of the disease as with other respiratory diseases (Feng et al., 2020: 1.2; Leung et al., 2020: 945; Naveed et al., 2020). Masks should be used especially in areas where many individuals are together such as shopping malls and parks. However, it is not possible to follow these rules in restaurants because individuals have to remove the mask while eating. It is important for this reason that restaurant employees wear masks to protect both their own and customer health.

### ***Hygiene and Sanitation***

The concepts of hygiene and sanitation have gained more importance for restaurants with the COVID-19 outbreak. Customers have started to realize their restaurant preferences by considering these elements (Chang et al., 2021). Meanwhile, neglect of hygiene and sanitation during this period can both risk the health of individuals and damage the reputation of businesses (Lakshmi & Shareena, 2020: 1331). It is important that chefs, waitstaff, managers, cleaning staff act in accordance with the hygiene and sanitation rules in the entire service process from welcoming the customers and seeing them off in restaurants (Freitas & Stedefeldt, 2020: 2).

### ***Social Distancing***

“Social distance” is very important to prevent the spread of the disease because the COVID-19 outbreak is a respiratory-transmitted disease. Social distancing means that individuals leave a gap

between each other (Sun & Zhai, 2020). Research has found that the rate of spread of the outbreak slows down by keeping the social distance (Ganem et al., 2020; Zhang, 2020b). Many countries have made it compulsory to comply with social distancing rules in crowded places to prevent the spread of the disease for this reason. Restaurant businesses should also adjust the restaurant layout in accordance with this legal requirement. The behavior of individuals to avoid other individuals due to social anxiety and disgust along with the outbreak made it necessary to implement social distancing for restaurants in addition to the compulsion (Rosa, 2020).

### ***Temperature Measurement***

The COVID-19 outbreak has symptoms such as fever, cough, and shortness of breath (Chung et al., 2020). Especially high fever is among the most important and common symptoms of the disease (Cao, et al., 2020). Jiang et al. (2020) found that 98% of the patients had a fever, Cao et al. (2020) found that 86.9% had a fever, and Fang et al. (2020) found that 83.0% had high fever in the studies they conducted. Temperature measurement should be performed at the entrances of the restaurant in order to determine whether the customers carry the disease for this reason.

### ***Hypotheses***

It was found in the studies conducted (Knight et al., 2009, Buchler vd., 2010; Lee vd., 2012) that demographic characteristics such as age, gender, educational status, and income affect individuals' perceptions of food safety. However, this may vary from research to research. H<sub>1</sub> hypothesis was created and tested in order to reveal the difference in perceptions of hygiene and safety measures taken in restaurants according to demographic characteristics of individuals in this research.

- H<sub>1</sub> Perceptions of hygiene and safety measures taken in restaurants differ according to the demographic characteristics of the participants.

Meanwhile, studies (Lin, 1995; Taylor et al., 2012) found that the level of importance individuals attach to hygiene and safety measures may vary according to their demographic knowledge. H<sub>2</sub> hypothesis was created and tested in order to determine the validity of this situation in this research.

- H<sub>2</sub> The level of importance of hygiene and safety measures that restaurants must take differs according to the demographic characteristics of the participants.

### ***Methods***

The research was discussed using the screening model, which is one of the quantitative research methods. The necessary information about the method of the research is included in this section.

### ***Sample***

The research was conducted in Turkey. The population of the research was determined as Istanbul due to the fact that the population (TurkStat, 2020) and the number of food and beverage enterprises (TAVAK, 2018) are higher compared to other provinces in Turkey. 15,462,452 people lived in Istanbul in 2020 according to the information obtained from the Turkish Statistical Institute (TurkStat). Data were collected by determining the sample in the research with the idea that it would not be possible to reach each individual at this point. The number of samples was

calculated as 384 considering the size of the population in this context (Christensen et al., 2015: 173).

### ***Data Collection***

The research was conducted between June 2020 and November 2020. The COVID-19 outbreak still continued at the time of the study. The survey was conducted online through “Google Forms” for this reason. The convenience sampling technique was used to obtain the questionnaires. The questionnaire form of 388 participants was included in the study since no missing, incomplete, incorrect data were found and there was no extreme value.

The questionnaire form prepared consists of three parts. Statements aimed at determining the demographic information of the participants are included in the first part. Statements aimed at determining the perceptions of the participants about the level of hygiene and safety measures required against the COVID-19 outbreak in the restaurants they go to in the second part. The statements in this section consisting of a total of 39 statements were created by using the “COVID-19 Outbreak Management and Working Guide” prepared by the Ministry of Health of the Republic of Turkey (2020). The options of (1) Not Complied at all - (2) Mostly Not Complied - (3) Moderately Complied, (4) Mostly Complied - (5) Fully Complied - (6) Not Observed - (7) Not Available in the Restaurant I went to are included on the prepared scale. The reliability of the scale was found to be 0.97.

Exploratory factor analysis was applied to determine the relationships between the 39 items in the scale, to facilitate the analyses, and to increase comprehensibility. A scale development study was conducted through factor analysis since the statements in the questionnaire form were created by using the literature review and expert opinions. KMO and Bartlett's tests were performed to determine the suitability of factor analysis. The scale was found to be suitable for factor analysis since Bartlett's sphericity test value was calculated as 0.000 and KMO (Kaise-Meyer-Olkin) sample adequacy value was calculated as 0.94.

Three factors with greater than one eigenvalue were identified as a result of the factor analysis. The four statements were removed from the scale because they were overlapping. These statements are as follows: “*Providing only a side by side seating arrangement at the tables (not sitting side by side)*”, “*Waitstaff avoiding close contact during the service*”, “*Leaving 1.5 meters distance between the tables where the food service is provided*”, and “*Not using the bar tables where the customer and the staff are directly faced*”. Three factors were identified as a result of the factor analysis. These three factors are named “Hygiene and Sanitation Measures”, “Service Measures”, and “Cleaning-Mask-Distance Measures”.

There are 12 new additional measures that were developed by the researcher and that are not included in the COVID-19 Outbreak Management and Working Guide in the third part of the questionnaire. Participants were asked to evaluate the measures on a scale of (1) Absolutely unnecessary - (2) Unnecessary - (3) Neither Necessary nor Unnecessary - (4) Necessary - (5) Absolutely Necessary. The reliability of the scale was found to be 0.93 and it was fairly high.



**Table 1: Perceptions of Hygiene and Safety Measures Taken in Restaurants**

Statements	Loadings
<b>F1- Hygiene and Sanitation Measures</b> (Eigenvalue: 19.370; Variance Explained: 55.344; Factor Mean: 3.4675; Cronbach's Alpha: 0.83)	
Chefs taking off their outerwear before entering the kitchen	0.797
Chefs wearing disposable gloves while preparing the dish	0.793
Not allowing personnel who are not assigned to the kitchens	0.784
Chefs changing masks every 4 hours	0.782
Keeping the necessary tools and equipment for hand and body hygiene in the kitchen and raw material delivery area	0.781
Chefs wearing a face mask while preparing the dish	0.778
Washing the service materials (plates, forks, spoons, etc.) in the dishwasher	0.764
Visual/written information about the rules to be followed by the personnel and good hygiene practices hung on the kitchen walls	0.717
Frequent and safe removal of wastes from the operation	0.716
Use of personal protective equipment (gloves and mask) by the cleaning personnel	0.713
Employment of the same personnel as much as possible on the same shift	0.703
Restaurant having an adequate ventilation system	0.680
Use of single-use paper towels instead of fan hand driers in restrooms	0.673
Informing customers that awareness training has been given to personnel about the COVID-19 outbreak	0.666
Entrance doors in restroom areas having an automatic door system (opening-closing sensor door system)	0.647
Recording the cleaning hours of toilets and sinks and hanging them on the walls	0.638
Hanging the healthcare checks and follow-up dates of the personnel on the wall in the form of a schedule	0.620
Personnel wearing clean clothes	0.616
Offering a contactless payment option in the restaurant	0.609
Keeping hand sanitizer at the entrances of general areas of use and general customer restrooms	0.578
<b>F2- Service measures</b> (Eigenvalue: 2.264; Variance Explained: 6.470; Factor Mean: 3.4875; Cronbach's Alpha: 0.76)	
Wiping materials such as dining tables, chairs, service materials, sugar bowl, saltshaker, menu after each guest use	0.684
Serving food at the buffet by personnel	0.639
Keeping disposable sugar, salt, spices, napkins	0.617
Disinfecting the POS device after each use	0.615
Keeping hand sanitizer at every table	0.609
Giving masks to guests at the entrance of the restaurant	0.585
Compliance of waitstaff with distance rules during service	0.575
Offering devices such as tea/coffee machine, water dispensers, drink machine to guests through the waitstaff	0.567
<b>F3 - Cleaning-Mask-Distance measures</b> (Eigenvalue: 1.065; Variance Explained: 3.042; Factor Mean: 3.7449 Cronbach's Alpha: 0.83)	
Measuring the temperature of the guests at the entrance of the restaurant	0.762
Not allowing customers without masks into the restaurant	0.760
Keeping hand sanitizer at the entrances of the restaurant	0.710
Valets not getting into vehicles without masks	0.694
Keeping a distance of 60 cm between chairs side by side	0.610
Presence of social distancing markings with an interval of 1.5 meters wherever a queue may occur (in front of the sink, smoking areas, etc.)	0.597
Valets cleaning their hands with hand sanitizer before parking	0.564
<b>KMO: 0.94</b>	<b>Total Variance Explained: %64.855</b>
<b>Bartlett: 0.000</b>	<b>Cronbach's Alpha: 0.86</b>
<b>Scale values:</b> (1) Not Complied at All - (2) Mostly Not Complied - (3) Moderately Complied, (4) Mostly Complied - (5) Fully Complied - (6) Not Observed (Defined as Lost value) - (7) Not Available in the Restaurant I went to (Defined as Lost value)	

Factor analysis was applied to determine the relationships between the 12 items in the scale and to facilitate the analyses. The statements in the form were developed by the researchers and expert opinions were also used. KMO and Bartlett's tests were performed to determine the suitability of factor analysis. The scale was found to be suitable for factor analysis since Bartlett's sphericity test value was calculated as 0.000 and KMO (Kaiser-Meyer-Olkin) sample adequacy value was calculated as 0.94.

Scree plot graph, which is frequently used in determining the dimensions considering the small number of statements, was used as a result of the factor analysis applied (Mindrila, 2017: 16). It was determined that there were three factors up to the point where it took the horizontal shape when the graph was examined. Meanwhile, the researcher can decide on the number of factors in order to reveal and analyze a data set more clearly as Fabrigar and Wegener (2012: 65) stated in their research. The researcher predicted that statements should be collected under three dimensions

while performing factor analysis in this research. These dimensions are named “Proof of Measures”, “Isolation”, and “Inspection”. The statement “*fixing tables and chairs so that social distancing rules cannot be violated*” was removed from the scale because it was overlapping.

**Table 2: Level of Importance of Hygiene and Safety Measures Restaurants Must Take**

Statements	Loadings
<b>F1- Proof of Measures</b>	
<b>(Eigenvalue: 6.535; Variance Explained: 59.409; Factor Mean: 3.4914; Cronbach's Alpha:0.83)</b>	
Reflecting camera images in a way that customers can see by placing cameras in kitchens	0.772
Writing the temperature measurement results of the personnel in tables as day/hour and hanging them on the wall	0.754
Designing kitchens so that customers can see inside (open kitchen)	0.745
Creating indoor booths for customers who want to eat separately in restaurants	0.738
Separating the seating areas on the tables with glass compartments	0.674
Using the HES Code application applied during trips, in restaurants	0.650
<b>F2- Isolation</b>	
<b>(Eigenvalue: 0.798; Variance Explained: 7.258; Factor Mean: 3.7595; Cronbach's Alpha:0.81)</b>	
Ensuring that restaurant restrooms are used by one person at a time	0.824
Keeping disposable plastic plates, forks, knives, etc. for the customers who may request them	0.715
Use of QR-code menus	0.575
<b>F3- Inspection</b>	
<b>(Eigenvalue: 0.656; Variance Explained: 5.962; Factor Mean: 3.9575; Cronbach's Alpha: 0.86)</b>	
Inspection of businesses on hygiene with secret customer application	0.859
Keeping a separate officer in charge of hygiene inspection in the restaurant	0.624
<b>KMO: 0.941</b>	<b>Total Variance Explained: %72.629</b>
<b>Barlett: 0.000</b>	<b>Cronbach's Alpha: 0.88</b>
<b>Scale values: (1) Absolutely unnecessary - (2) Unnecessary - (3) Neither Necessary nor Unnecessary - (4) Necessary - (5) Absolutely Necessary</b>	

“Inspection” is a dimension consisting of two statements. The reliability increases as the number of items increases in a factor as Worthington & Whittaker (2006) stated. However, one factor can make two statements if the items have a high correlation (70) and their relationship between other statements is weak. The decision to retain or remove the factors depends on the researcher at this point. Henson et al. (2006) found that hygiene inspections were related to the food safety felt by individuals. It was thought based on this result that the “Inspection” dimension would be important for the research and it was decided that it should remain.

## Results

The data obtained through the questionnaire form were analyzed with the SPSS software in this part of the study. Firstly, frequency analysis was applied to the demographic information of the participants. Then, perceptions of hygiene and safety measures taken in restaurants and mean and standard deviations of the statements in the levels of importance of hygiene and safety measures restaurants must take were included. It was found that the data showed normal distribution when the kurtosis and skewness values of the statements in both scales were examined. Therefore, t-test and one-way ANOVA tests were used to measure the differences.

### *Background of the Participants*

The study was conducted with 388 participants. 59.3% of the participants were female and 40.7% were male. It is seen that the individuals in the “18-24” age range have the highest rate with 39.9% when the age ranges are examined. Individuals in the “45 and above” age group are as low as 9.8%. Individuals with an “associate/undergraduate and graduate” level of education constitute the highest group with 55.1%. This rate is followed by “secondary education (high school)” with 35.1%. “Single” individuals had a higher rate with 61.3% compared to “married” individuals

(38.7%) in the study. 45.4% of the participants were private-sector employees. This rate is followed by “unemployed” individuals with 34.8%.

**Table 3: Demographic Characteristics of the Participants**

Variable	n	%	Variable	n	%
<b>Gender</b>			<b>Profession:</b>		
Female	230	59.3	Public employee	35	9.0
Male	158	40.7	Private sector employee	176	45.4
<b>Age</b>			Self-employed	42	10.8
18-24	155	39.9	Unemployed	135	34.8
25-34	105	27.1	<b>Monthly Income Level (TRY)</b>		
35-44	90	23.2	Less than 1000 TRY	84	21.0
45 and above	38	9.8	1000-2000 TRY	37	9.5
<b>Educational Status</b>			2000-3000 TRY	140	36.0
Primary School (Primary-secondary school)	36	9.3	3000-4000 TRY	52	13.5
Secondary Education (High School)	136	35.1	4000-5000 TRY	25	6.5
Associate Degree/Undergraduate and Graduate	216	55.1	5000 TRY and above	50	13.5
<b>Marital Status</b>			<b>Income Status</b>		
Married	150	38.7	Low	210	54.1
Single	238	61.3	Average	132	34.0
			High	46	11.9

36.0% of the participants stated that they had income in the range of “2000-3000 TRY” per month. This rate was followed by the participants who stated that they had a monthly income of “less than 1000 TL” with 21.0%. 54.1% of the participants described the income level as “low”. A low number of participants (11.9%) also defined the income level as “high”.

### ***Mean and Standard Deviations of Participants' Perceptions of Hygiene and Safety Measures Taken in Restaurants***

Statements were given to determine participants' perceptions of hygiene and safety measures taken in restaurants they visited during the COVID-19 outbreak. The mean and standard deviation of the responses to the statements were determined. Detected means are listed from the highest to the lowest. Accordingly, the statement “*Not allowing customers without masks into the restaurant*” ranked first with the highest mean rate of 3.89%. The statement “*Keeping hand sanitizer at the entrances of the restaurant*” ranks second with 3.88%. “*Valets cleaning their hands with hand sanitizer before parking*” ranks in third place with 3.82%.

### ***Participants' Level of Importance of Hygiene and Safety Measures Restaurants Must Take***

A number of measures that restaurants can take during the COVID-19 outbreak were created by the researcher. Participants were asked to indicate whether they found these measures necessary or not. The mean and standard deviation of the responses to the measures were determined. Detected means are listed from the highest to the lowest. “*Inspection of businesses on hygiene with secret customer application*” ranks first with 4.12%. Then it is followed by “*ensuring that restaurant restrooms are used by one person at a time*” with 3.91%. “*Keeping a separate officer in charge of hygiene inspection in the restaurant*” ranks third with a rate of 3.80%.

**Table 4: Mean and Standard Deviations of Participants' Perceptions of Hygiene and Safety Measures Taken in Restaurants**

Statements	Mean	SD
Not allowing customers without masks into the restaurant	<b>3.89</b>	<b>0.93</b>
Keeping hand sanitizer at the entrances of the restaurant	<b>3.88</b>	<b>0.96</b>
Valets cleaning their hands with hand sanitizer before parking	<b>3.82</b>	<b>0.93</b>
Measuring the temperature of the guests at the entrance of the restaurant	3.82	0.97
Offering a contactless payment option in the restaurant	3.77	0.99
Personnel wearing clean clothes	3.73	1.04
Waitstaff avoiding close contact during the service	3.68	1.00
Keeping hand sanitizer at the entrances of general areas of use and general customer restrooms	3.67	1.02
Leaving 1.5 meters distance between the tables where the food service is provided from every direction	3.65	1.00
Valets not getting into vehicles without masks	3.65	0.86
Presence of social distancing markings with an interval of 1.5 meters wherever a queue may occur (in front of the sink, smoking areas, etc.)	3.64	1.02
Keeping a distance of 60 cm between chairs side by side	3.61	1.04
Compliance of waitstaff with distance rules during service	3.59	1.06
Offering devices such as tea/coffee machine, water dispensers, drink machine to guests through the waitstaff	3.59	1.02
Keeping disposable sugar, salt, spices, napkins	3.59	1.01
Use of personal protective equipment (gloves and mask) by the cleaning personnel	3.59	1.05
Serving food at the buffet by personnel	3.58	1.02
Not using the bar tables where the customer and the personnel are faced directly	3.56	0.98
Visual/written information about the rules to be followed by the personnel and good hygiene practices hung on the kitchen walls	3.56	1.06
Recording the cleaning hours of toilets and sinks and hanging them on the walls	3.55	1.08
Restaurant having an adequate ventilation system	3.55	0.99
Providing only an opposite seating arrangement at the tables (not sitting side by side)	3.53	0.98
Keeping hand sanitizer at every table	3.53	1.03
Use of single-use paper towels instead of fan hand driers in restrooms	3.53	1.01
Washing the service materials (plates, forks, spoons, etc.) in the dishwasher	3.52	1.08
Not allowing personnel who are not assigned to the kitchens	3.48	1.08
Frequent and safe removal of wastes from the operation	3.48	1.04
Keeping the necessary tools and equipment for hand and body hygiene in the kitchen and raw material delivery area	3.48	1.02
Wiping materials such as dining tables, chairs, service materials, sugar bowl, saltshaker, menu after each guest use	3.47	1.06
Chefs taking off their outerwear before entering the kitchen	3.46	1.12
Chefs wearing a face mask while preparing the dish	3.42	1.12
Employment of the same personnel as much as possible on the same shift	3.41	1.04
Chefs wearing disposable gloves while preparing the dish	3.38	1.10
Giving masks to guests at the entrance of the restaurant	3.37	1.18
Entrance doors in restroom areas having an automatic door system (opening-closing sensor door system)	3.33	1.09
Informing customers that awareness training has been given to personnel about the COVID-19 outbreak	3.32	1.13
Disinfecting the POS device after each use	3.30	1.07
Hanging the healthcare checks and follow-up dates of the personnel on the wall in the form of a schedule	3.27	1.13
Chefs changing masks every 4 hours	3.27	1.12

**Table 5: Participants' Level of Importance of Hygiene and Safety Measures Restaurants Must Take**

Statements	Mean	SD
Inspection of businesses on hygiene with secret customer application	<b>4.12</b>	<b>0.83</b>
Ensuring that restaurant restrooms are used by one person at a time	<b>3.91</b>	<b>0.95</b>
Keeping a separate officer in charge of hygiene inspection in the restaurant	<b>3.80</b>	<b>0.97</b>
Keeping disposable plastic plates, forks, knives, etc. for the customers who may request them	3.76	0.99
Fixing tables and chairs so that social distancing rules cannot be violated	3.62	1.05
Use of QR-code menus	3.61	1.01
Writing the temperature measurement results of the personnel in tables as day/hour and hanging them on the wall	3.57	1.03
Creating indoor booths for customers who want to eat separately in restaurants	3.55	1.05
Designing kitchens so that customers can see inside (open kitchen)	3.51	1.02
Using the HES Code application applied during trips in restaurants	3.46	1.09
Reflecting camera images in a way that customers can see by placing cameras in kitchens	3.44	1.08
Separating the seating areas on the tables with glass compartments	3.43	1.00

### Difference Analyses

Kurtosis and skewness values were examined before the data were analyzed in the research. It was found that the data showed normal distribution and parametric tests could be applied. T-test was used to measure the differences in cases such as gender and marital status where two variables were found. A one-way ANOVA test was performed in cases where there were more than two variables. The differences between the statements according to the age, educational status, and income of the participants were tested with the one-way ANOVA test. Tukey’s test was used to determine the source of the difference in the groups with differences.

It was found that participants' perceptions of hygiene and safety measures taken in restaurants did not differ according to gender, marital status, age, educational status, profession, and income status. In this case, the “H<sub>1</sub>: Perceptions of hygiene and safety measures taken in restaurants differ according to the demographic characteristics of the participants” hypothesis was rejected.

The level of importance of participants to hygiene and safety measures restaurants must take differs according to their gender. A difference was found in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” as a result of the t-test. The identified differences are provided in Table 6. It was found that female participants had a higher rate of agreement on statements compared to male participants in all dimensions with differences when the means of the responses of the participants were examined.

**Table 6:** Level of Importance of Participants to Hygiene and Safety Measures Restaurants Must Take According to Their Gender

Statements	Gender	N	Mean	t	Sig.
Proof of Measures	Female	230	3.6232*	0.821	0.000
	Male	158	3.2996		
Isolation	Female	230	3.9217*	4.854	0.000
	Male	158	3.5232		
Inspection	Female	230	4.1283*	5.190	0.000
	Male	158	3.7089		

Scale values. 5 - Absolutely necessary, 4 - Necessary, 3 - Neither necessary nor unnecessary, 2 - Unnecessary, 1 - Absolutely unnecessary.

T-test was applied to determine the difference between the level of importance of participants to hygiene and safety measures restaurants must take according to their marital status. A difference was found in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” as a result of the test. The identified differences are provided in Table 7. It was found that single participants had a higher rate of agreement on statements compared to married participants in all dimensions with differences when the means of the responses of the participants were examined.

**Table 7:** Level of Importance of Participants to Hygiene and Safety Measures Restaurants Must Take According to Their Marital Status

Statements	Marital Status	N	Mean	t	Sig.
Proof of Measures	Married	150	3.2844	-3.840	0.000
	Single	238	3.6218		
Isolation	Married	150	3.5622	-3.728	0.000
	Single	238	3.8838		
Inspection	Married	150	3.7500	-4.097	0.000
	Single	238	4.0882		

Scale values. 5 - Absolutely necessary, 4 - Necessary, 3 - Neither necessary nor unnecessary, 2 - Unnecessary, 1 - Absolutely unnecessary.

One-way ANOVA was applied to determine the difference between the level of importance of participants to hygiene and safety measures restaurants must take according to their age. A difference was found in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” as a result of the test. The source of the difference in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” was found to be caused by the age of “18-24” and other age groups according to Tukey’s test. Individuals in the “18-24” age group have higher participation in the dimensions.

**Table 8:** Level of Importance of Participants to Hygiene and Safety Measures Restaurants Must Take According to Their Age

Statements	Variable	N	Mean	F	Sig.
Proof of Measures	18-24*	155	3.7194	6.528	0.000
	25-34	105	3.3302		
	35-44	90	3.3833		
	45 and above	38	3.2632		
Isolation	18-24*	155	3.9914	7.289	0.000
	25-34	105	3.5524		
	35-44	90	3.6815		
	45 and above	38	3.5702		
Inspection	18-24*	155	4.1806	7.800	0.000
	25-34	105	3.8476		
	35-44	90	3.8444		
	45 and above	38	3.6184		

*Scale values.* 5 - Absolutely necessary, 4 - Necessary, 3 - Neither necessary nor unnecessary, 2 - Unnecessary, 1 - Absolutely unnecessary.

One-way ANOVA was applied to determine the difference between the level of importance of participants to hygiene and safety measures restaurants must take according to their profession. A difference was found in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” as a result of the test. Tukey's test was used to determine the source of the differences. The source of the difference in the dimension of “Proof of Measures” is caused by “unemployed” individuals and “private sector employees” individuals. The source of the difference in the dimension of "isolation" is caused by “unemployed” individuals and “private sector employees” and “self-employed” individuals. The source of the difference in the dimension of “Inspection” is between “unemployed” individuals and other professional groups. It is seen that the mean of “unemployed” individuals in all dimensions with differences has a high rate.

**Table 9:** Level of Importance of Participants to Hygiene and Safety Measures Restaurants Must Take According to Their Type of Employment

Statements	Variable	N	Mean	F	Sig.
Proof of Measures	Public Employee	35	3.3905	7.029	0.000
	Private Sector Employee*	176	3.3295		
	Self-employed	42	3.4008		
	Unemployed*	135	3.7568		
Isolation	Public Employee	35	3.7429	10.189	0.000
	Private Sector Employee*	176	3.5739		
	Self-employed*	42	3.5714		
	Unemployed*	135	4.0642		
Inspection	Public Employee*	35	3.8286	17.342	0.000
	Private Sector Employee*	176	3.7528		
	Self-employed*	42	3.7024		
	Unemployed*	135	4.3370		

*Scale values.* 5 - Absolutely necessary, 4 - Necessary, 3 - Neither necessary nor unnecessary, 2 - Unnecessary, 1 - Absolutely unnecessary.

One-way ANOVA was applied to determine the difference between the level of importance of participants to hygiene and safety measures restaurants must take according to their income status. A difference was found in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” as a result of the test. Tukey's test was used to determine the source of the differences. The source of the difference in the dimensions of “Proof of Measures” and “Isolation” was found to be caused by individuals with “average” and “high” income. The source of the difference in the dimension of “Inspection” is between individuals with “high” income and individuals in other income groups. It is seen that the mean of individuals with “average-income” in all dimensions with differences has a high rate.

**Table 10:** Level of Importance of Participants to Hygiene and Safety Measures Restaurants Must Take According to Their Income Status

Statements	Variable	N	Mean	F	Sig.
Proof of Measures	Low	210	3.4905	3.676	0.026
	Average*	132	3.5947		
	High*	46	3.1993		
Isolation	Low	210	3.7698	3.070	0.048
	Average*	132	3.8384		
	High*	46	3.4855		
Inspection	Low*	210	3.9548	5.666	0.004
	Average*	132	4.0795		
	High*	46	3.6196		

*Scale values.* 5 - Absolutely necessary, 4 - Necessary, 3 - Neither necessary nor unnecessary, 2 - Unnecessary, 1 - Absolutely unnecessary.

It was found that the level of importance of participants to hygiene and safety measures restaurants must take varied according to gender, marital status, age, profession, and income status. However, there was no difference in educational status. In this case, the “H<sub>2</sub>: Level of importance of hygiene and safety measures that restaurants must take differs according to the demographic characteristics of the participants” hypothesis was accepted.

## Conclusions

The COVID-19 outbreak is an important disease that spreads rapidly and significantly affects the health of individuals. It is not only limited to a certain age, gender, region, and various factors but also causes negative effects in all individuals with the disease. Therefore, it is usual to reject the hypothesis “H<sub>1</sub> Perceptions of hygiene and safety measures taken in restaurants differ according to the demographic characteristics of the participants”. Tse et al. (2006), Kim and Lee (2020) found that individuals had reservations about going to restaurants while at risk in their studies. Participants are also likely to choose restaurants that meet the existing criteria set out in the COVID-19 Outbreak Management and Working Guide regardless of demographic characteristics by acting with this reservation.

A number of results were found in the differences between the level of importance of hygiene and safety measures restaurants must take and the demographic characteristics of individuals. The participation of female participants in the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” was found to be higher. In other words, it was found that female participants considered additional measures presented for hygiene and safety to be more necessary compared to male participants. This result is similar to studies stating that women attach more importance to hygiene and safety in restaurants compared to men (Dosman et al., 2001; Worsfold, 2006; Lee vd., 2012; Cha and Borchgrevink, 2019).

Additional measures developed under the dimensions of “Proof of Measures”, “Isolation”, and “Inspection” were found by single individuals to be more necessary compared to married participants. It is thought that the reason for this situation may be that married participants make fewer demands on restaurants during this period due to their perception of risk. It has been predicted that single participants who go to restaurants more frequently compared to married people may want measures to be increased in order to reduce the risk of contracting diseases.

A difference was found between the ages of “18-24” and other age groups in the dimensions of “Proof Measures”, “Isolation”, and “Inspection”. It is predicted that the reason for this situation is that individuals in this age group go to restaurants more frequently due to the necessity of socialization, emotional requirements, requirements arising from conditioning, and requirements arising from public opinion. It is thought that this age group who goes to the restaurant to meet these requirements finds additional measures necessary to protect themselves from the disease while meeting their needs.

There are differences between “unemployed” individuals and “private sector employee” in the dimension of “Proof of Measures”; “unemployed” individuals, and “private sector employee” and “self-employed individuals” in the dimension of “Isolation”; “unemployed” individuals and other professional groups in the dimension of “Inspection”. Individuals who were unemployed found all the measures developed under the dimensions more necessary and stated that the measures should be applied. Individuals who do not work at this point may be individuals who have temporarily or permanently lost their jobs due to the current outbreak. Therefore, it is likely that they want the spread of the outbreak to be reduced by increasing the measures. Individuals who are “private sector employees” and “self-employed individuals” may have experienced desensitization against the disease because they are actively faced with risk in business life during the day.

There is a difference between individuals with “average” income level and individuals with “high” income in the dimensions of “Proof of Measures” and “Isolation”. There is also a difference between individuals with “low” and “average” income and individuals with “high” income in the dimension of “Inspection”. Individuals with high income may feel safe in the restaurants they go to due to the extra importance of the outbreak in luxury restaurants. Therefore, they may find additional measures less necessary compared to other groups. Neglects can be experienced more in individuals with low and average income in low-budget restaurants. It is thought that individuals in this group consider it necessary to increase the measures for this reason.

Some suggestions were developed in the research in line with all these results determined. Restaurant owners should conduct a risk analysis of their business against the outbreak, as well as measures developed by the Ministry of Health and the researcher. They should develop a number of measures to reduce these risks. Henson et al. (2006) found that hygiene inspections were related to the food safety felt by individuals. The Ministry of Health can only apply a specific certification method for restaurants for the COVID-19 outbreak, accordingly.

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