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Hotel Industry and Environmental Laws: A Case Study of Selected Restaurants in Islamabad



Asma Javed
Anwar Hussain

Department of Environmental Economics
Pakistan Institute of Development Economics, Islamabad, Pakistan



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Asma Javed

Pakistan Institute of Development Economics, Islamabad

and

Anwar Hussain

Pakistan Institute of Development Economics, Islamabad

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Pakistan Institute of Development Economics
Islamabad, Pakistan

E-mail: publications@pide.org.pk

Website: <http://www.pide.org.pk>

Fax: +92-51-9248065

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C O N T E N T S

	<i>Page</i>
Abstract	v
1. Introduction	1
1.1. Introduction	1
1.2. Significance of Study	2
1.3. Environmental Laws in Pakistan their Violations	2
2. Data and Methodology	4
2.1. Introduction	4
2.2. Study Site	4
2.3. Nature of Data and Its Source	4
2.4. Sampling Design	5
2.5. Analytical Tools	5
3. Results and Discussions	6
3.1. Introduction	6
3.2. Descriptive Statistics of Qualitative and Quantitative Variables	6
3.3. Cross Tabs and Relationship Among Variables	7
3.4. Education of Manager and Internal Environmental System of Restaurant	7
3.5. Training of Staff and Internal Environmental System of Restaurant	7
3.6. Relationship between Submission of Staff Medical Certificate to Management and Environmental System of Restaurant	7
3.7. Penalty and Internal Environmental System of Restaurants	8
3.8. Type of Environmental Auditing and Monthly Sales of Restaurants	8
3.9. Relationship between Experience of Manager and Average Monthly Sale of Restaurant	9
3.10. The State of Washing Hands before Cooking in Restaurants	9
3.11. Regression Analysis of the Determinants of Customer Willingness to Pay for Standard Food Items	10
3.12. Regression Analysis of the Determinants of Customer Willingness to Pay for Pakistani Food Item	10

	<i>Page</i>
3.13. Regression Analysis of the Determinants of Customer Willingness to Pay for Chinese Food Item	11
3.14. Regression Analysis of the Determinants of Customer Willingness to Pay for Continental Food Item	11
3.15. Regression Analysis of the Determinants of Customer Willingness to Pay for Sea Food Items	12
4. Conclusion and Recommendations	13
Appendices	14
References	17

List of Tables

Table 1.	Frequency Distribution of Qualitative Variables	6
Table 2.	ANOVA Results for Relationship between Education of Manager and Internal Environmental System of Restaurant	7
Table 3.	Training of Staff and Environmental Performance of Restaurant	7
Table 4.	Submission of Staff Medical Certificate to Management and Environmental System of Restaurant	8
Table 5.	Penalty and Internal Environmental System Restaurants	8
Table 6.	Relationship between Experience of Manager and Average Monthly Sales of Restaurant	9
Table 7.	Regression Results of the Determinants of Customer Willingness to Pay for Pakistani Food Item	10
Table 8.	Regression Results of the Determinants of WTP for Chinese Food Item	11
Table 9.	Regression Results of the Determinants of WTP for Continental Food Item	12
Table 10.	Regression Results of the Determinants of WTP for Sea Food	12

List of Figures

Figure 1.	Environmental Auditing and Monthly Sales of Restaurants	8
Figure 2.	The State of Washing Hands before Cooking in Restaurants	9

ABSTRACT

Although hospitality industry is an important sector providing comfort to the customers in the form of shelter, food and refreshment but the operations of the hotel also impact environment in many ways like CO₂ emissions, water pollution and waste generated. In Pakistan hospitality industry is growing and flourishing and it is the need of time to assess the adoption of the Hotels and Restaurant Act 1997 followed by customers' willingness to pay for green foods. The present study examined the customer's willingness to pay for standard food items (Pakistani, Chinese, Continental, and Seafood) and also assessed the adoption of Hotels and restaurant Act 1997 in Islamabad. Besides, the impact of monitoring on the revenues of restaurants was also estimated. For this purpose, primary data had been collected from managers and kitchen staff of 35 restaurants and 400 customers through questionnaires in Islamabad. The findings of the study revealed that cleanliness and quality of service, education, income of customers have positive relationship with customer's willingness to pay (CWTP) for standard food item but noisy location of restaurant has negative relation with CWTP. The revenue of the restaurant have positive relation with frequencies of audit, chain affiliation, penalty, security guards, open kitchen and number of customers. The restaurants are not following all the prescribed laws of the Hotel & Restaurant Act. Based on the findings of the study, it is recommended that Managers should consider the customer's preferences and choices and properly train the kitchen staff about health, hygiene and food practices. Production area should be made compulsory open and ban the washroom in production area. The existing penalty amount should be revised and the laws should provide heavy penalty to restaurant to avoid violations.

Keywords: Hospitality Industry, Hotel and Restaurant Act, Customer Willingness to Pay, Managers, Food Items, Islamabad

1. INTRODUCTION

1.1. Introduction

The humans are surrounded by enormous environmental problems like global warming depletion of resources, increased water and air pollution and ozone layer depletion etc.

Although hospitality industry is an important sector providing comfort to the customers in the form of shelter, food and refreshment but the operations of the hotel impact environment in many ways like CO₂ emissions, water pollution and waste generated. The increase in the usage of services of the hotels also put pressure on the use of water, resources and energy that further generate pollution [Bohdanowicz and Martinac (2003); Hu (2007)].

In the late 1990s, the United States Environmental Protection Agency claimed that “managing and identifying the environmental costs contribute to improving the financial results of doing business” [EPA (1998)]. Since 1970s in the USA, with the main objective of promoting their environmental sustainability, the American Hotel and Lodging Association monitored the environmental impacts of hotels and other accommodations. The Forum published the guidelines for solution of environmental issues to promote the environmental responsibility of hotels and restaurants. Two significant programs, the Agenda 21 and International Hotel Environmental Initiatives (IHEI) were included in the sustainable development during the 1990s, which further led to the development of voluntary systems such as eco-labels and environmental management systems. Globally, the hotel sector has been demanded on a course of implementing environmental management practices or a much more formal tool called Environmental Management System (EMS) to reduce the negative impacts on environment. Due to the efforts put in by various associations like IHEI, the concept of environmental management gained worldwide popularity and was recognised by many hotels globally [Meade and Pringle (2001); Ustad (2010)].

Due to the increasing awareness of customers around the globe, there is pressure on the hotels and restaurants to apply environmental sustainability practices that require fulfilling the availability of such instruments and tools which measure the hotels impact on the environment [Janković and Krivačić (2014)]. The use of ISO 14001 and Green Globe 21 were the most common certifiers which were adopted by the hotels and restaurants. Throughout the world these two EMS frameworks are the most accepted one by the hotels and restaurants because these frameworks enhance and improve the environmental performance and compliance with the legislation of the environment. Because of the pressure imposed by the governments, the hotels and restaurants adopt the ISO 14001 certification standard [Chan and Wong (2006)].

In 1994 Green Globe 21 (GG21) was established. It is subsidiary to the World Travel and Tourism Council (WTTC) that was established with the main objective of implementing Agenda 21 Principles. The main specific purpose of the GG21 is to help increase the global participation of all tour and travel customers and suppliers to ensure best and good environmental practices to lessen the impact of their operations and activities on the environment development of Green Globe: these comprise many National organisations such as African Travel Association, New Zealand tourism industry and some of the broadly based international associations such as Pacific Asia Travel Association (PATA) and regional specific associations such as European Tour Operators Association (ETOA) and International Hotel Environmental Initiative (IHEI) [Ustad (2010)]. Hotel Building Environmental Assessment Scheme (ECOTEL), Green Globe etc. are the benchmarks for the environmental performance of the hotels and restaurants. They all are called Environmental Assessment Methods (EAMs) collectively, which share the same core notion by providing the assessment criteria and operational guidelines for hotel managers with respect to environmental issues. A logo called an “Eco-Label” are awarded to the hotel and restaurants which succeeds in an assessment [Lo, *et al.* (2014)].

1.2. Significance of Study

In Pakistan with each passing year hotel industry is growing and flourishing, the hotel industry contributes 3 percent to GDP. From 2012-2014 the hospitality industry growth rate was 7 percent. With the construction of new and improved hotels and restaurants, the investment in local and international hotels and restaurants has grown steadily which pushes the trend for better customer service. In Hospitality Industry, environmental protection is important issue globally. Furthermore, Restaurants of Capital city Islamabad are facing the problem of environmental protection. Although Hotel and Restaurants Act 1997 exists under which all standards related to food and environment are mentioned but still customers in different areas of Islamabad are facing problem of unhygienic food in an unhygienic environment. Many residents complain that many restaurants are not following the safety and cleanliness standards of Hotel and Restaurant Act 1997. According to my knowledge no such study exists which estimated the customer’s willingness to pay for standard food items, compliance of environmental laws in restaurants followed by the impact of monitoring on revenues of restaurants.

1.3. Environmental Laws in Pakistan their Violations

In Pakistan “The Pakistan Environmental Protection Act 1997” was passed by the National Assembly of Pakistan on September 3, 1997, and by the Senate of Pakistan on November 7, 1997. The Act received the assent of the President of Pakistan on December 3, 1997. The text of the Environmental Protection Act 1997 is as follows:

“An Act to provide for the protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development. Whereas it is expedient to provide for the protection, conservation, rehabilitation and improvement of the environment, prevention and control of pollution, promotion of sustainable development and for

matters connected therewith and incidental thereto” [PEPA (1997)]. Nowadays government environmental and food departments are very active towards this issue, Under Pakistan hotels and restaurants act 1976 some rules were formed named Pakistan hotels and restaurant rules,

“An Act to provide measures for controlling and regulating the standards of service and amenities for tourists in hotels and restaurants.”

- (i) Under these rules every hotel has to apply for registration and for registration every hotel has to conform to, (Section 5 Subsection 2)
 - Standards of health, hygiene and comfort and this is minimum criteria for one star, two star, three star, four star, five star. (Clause a)
 - Along with this medical fitness certificate of hotel staff should be submitted and manager of hotel shall furnish certificates of medical fitness in respect of its staff by 15 January every year. (Clause b)
- (ii) For the purposes of this Act, the Controller may—(Section 19)
 - require an owner or a manager to undertake through an agency qualified to do so scientific tests of water, food and other articles of human consumption at the cost of the owner, to determine their quality and conformity with the requirements of health and hygiene; (Clause 3)
- (iii) Any owner or manager who serves any food or beverage which is injurious to health, or who does not take sufficient care to ensure protection of food and beverage against contamination through flies or in any other way, or serves any food or beverage in unclean or contaminated utensils, shall be liable to pay to the Controller a penalty of such sum not exceeding one thousand rupees the Controller may impose. (Section 22 subsection 2).

The concerned government departments issued a manual which lists down the different directions for the hotels, restaurants, bakeries and fast food eateries. According to the manual, the managers and hotel owners should prepare food in airy spaces with good access to water, list of staff who are always working in kitchen should be maintained and the workers with medical certificates proving they are vaccinated against communicable diseases. They should have access to soaps and hand sanitisers they do not touch food items without gloves workers. Construction of washrooms and toilets is forbidden in kitchen area. The authorities will take strict actions against the non-followers of directions [Adnan (2015)].

Islamabad authorities took strong actions and raided many of the eateries and sealed and fined many famous well known 51 eateries in the city and arrested food adulterators almost 37 and 17 outlets were sealed the administration teams imposed fines amounting to rupees 144000 across the capital. The violations noticed by authorities were washroom in production area, unmanaged and dirty freezers, spider webs, unvaccinated staff, food left in open dirty kitchen etc [Hussain (2015)].

Capital Development Authority is taking all possible measures to fulfil responsibility of health of citizens of Islamabad. CDA is active against the unhygienic and substandard food providers of the Islamabad. Members of the authorities stated that there

will be zero tolerance against the substandard and unhygienic food providers in Islamabad. CDA challanned 78 food Outlets and notices were issued to 119 food providers [CDA (2013)].

The Capital Development Authority issued 30 notices and 12 people were challaned for selling substandard, unhygienic and poor quality food items in the city. They confiscated 45 liters of expired ketchup and 5 dozens of no branded substandard snacks, and sealed one restaurant for selling unhealthy unhygienic food items [CDA (2014)].

In order to evaluate the assesment of adoption of Hotel & Restaurant Act 1997 and to examine the customer willingness to pay for standard food items primary data was used. This research will answer the questions such as up to what extent the Managers of restaurants are aware and follow the Environment Law/Act? And Do the customers consider the environment factor in the services delivery in restaurants?

The study aimed to fullfil the following objectives.

- To assess the adoption of Hotel & Restaurants Act 1997 in selected restaurant of Islamabad.
- To examine the customer's willingness to pay for standard food items.

Paper is organised as follow, Section 2 provides data description and methodology, Section 3 presents results and discussion and Section 4 is about conclusion and policy implication.

2. DATA AND METHODOLOGY

2.1. Introduction

This section provides details on study area profiles, nature of data used and its collection. Besides, the detailed sampling design followed by analytical tools is also discussed in subsequent sections.

2.2. Study Site

The Capital city of Pakistan, Islamabad, is 14km North East of Rawalpindi. The area of the city is 906 Square kilometre and capital development authority is main administrative body. In terms of population, urban development and economy is fastest growing and is the only planned city of Pakistan. Different government offices, foreign embassies and NGOs are present in the city due to which many of the foreign personnel visit Islamabad which is the main driving factor for Islamabad's hospitality market.

2.3. Nature of Data and Its Source

This study has used primary data collected from 35 Restaurants of Islamabad through questionnaires. Three types of questionnaire have been used, one for the managers (see Appendix A), second for head of kitchen staff (see appendix B) and third for customers availing the restaurant services (see Appendix C).

Customer willingness to pay in terms of four categories of food items i.e. Pakistani (desi), Continental, Chinese and sea food was checked by asking the questions about the satisfaction regarding the siting environment, cleanliness, quality of service, location of

the hotel, noise pollution and their awareness about environmental concerns as per environmental laws and practices.

This study also used panel primary data also which we have collected from 35 Restaurants for the time period 2010-2015.

2.4. Sampling Design

The total sample size for this study was 400 customers. For each category of food item (Pakistani, continental, Chinese and sea food) 100 customers were selected all of these samples were taken from 35 restaurants of Islamabad. These restaurants were selected randomly.

2.5. Analytical Tools

2.5.1. Descriptive Statistics

For the analysis of the data, descriptive statistics such averages, classification, tabulation, graphs have been used. Further, for measuring the relationship/ association among the variables of interest have been analysed through analysis of variance and Chi-Square statistics.

2.5.2. Econometric Model

This study applied following econometric models for the analysis.

To estimate the determinants of customer willingness to pay for main food products provided in the restaurants, the following linear logistic regression model was estimated through OLS.

$$WTP = \alpha + \beta_1 E + \beta_2 Y + \beta_3 OK + \beta_4 SC + \beta_5 QS + \beta_6 NL + \beta_7 KEN + \beta_8 ENP + \mu_i$$

This model was estimated for four main food items demanded in the restaurant i.e. Pakistani (Desi food), Chinese, Continental and Sea Food. So, four logistic regression models were estimated separately because customers were restricted to choose one food item only from four food categories.

WTP is the willingness to pay of the customers for these food items is a binary dependent variable taking value 1 if the customers are willing to pay for these food products fulfilling the environmental standards and 0 otherwise.

The construction/specification of the explanatory variables is given as under:

Education (E): Number of years in education

Income (Y): The per month income of the customers in Rs.

Open Kitchen (OK): Dummy variable taking value 1 if the customer has open access to kitchen and 0 otherwise.

Satisfaction with Cleanliness (SC): dummy variable taking value 1 if the customer is satisfied with the sitting environment and 0 otherwise.

Quality of Service (QS): Dummy variable taking value 1 if the customer is satisfied with quality of service (food delivery time) and 0 otherwise.

Noise Pollution (NP): Dummy variable taking value 1 if the restaurant is near noisy area and 0 otherwise.

Awareness/Environmental Education: Dummy variable taking value 1 if the customer is aware about the environmental quality of the food and 0 otherwise.

Customer Environmental Preference: Dummy variable taking value 1 if customer prefer environment for selection of restaurant and 0 otherwise.

3. RESULTS AND DISCUSSIONS

3.1. Introduction

This Section focuses on presenting descriptive statistics of both qualitative and quantitative variables followed by presenting their inter-relationship. Besides, econometric models to estimate the effect of various influencing factors on the willingness to pay for standard food items have been presented. These are given in subsequent sections

3.2. Descriptive Statistics of Qualitative and Quantitative Variables

The descriptive statistics of the qualitative variables are given in Table 1.

Table 1

Frequency Distribution of Qualitative Variables

Sr. No.	Variable	Possession/Availability	
		Yes	No
1	Open Kitchen for visit	20[57%]	15[43%]
2	Washroom in Production area	9[26%]	26[74%]
3	Submission of medical fitness certificate to management	16[46%]	19[54%]
4	Provision of Uniform (gloves, head cover etc.) to staff members	25[71%]	10[29%]
5	Recycling system	9[26%]	26[74%]
6	Internal Environmental system	20[57%]	15[43%]
7	Penalty faced	16[46%]	19[54%]
8	Dustbins present under table, lobby etc.	16[46%]	19[54%]
9	Knowledge regarding food practices	24[69%]	11[31%]

These statistics show that there were 35 restaurants in the sample of this study in which only 57 percent of the total sampled restaurants have open kitchen for visit. This shows that the restaurants are now opening their kitchens for customers to show their cleanliness standards through advertising and marketing strategies. The 26 percent of total sampled restaurants have washroom in production. This shows that the majority of the restaurants have washrooms outside the production area to avoid the smell, diseases and food contaminations by insects. Besides, as per the Hotel and Restaurant Act, it is compulsory for all staff members to submit their medical fitness certificate, but in the sampled restaurants only 46 percent have submitted their medical fitness certificates. Management of 71 percent restaurants provided uniform (gloves, head cover etc.) to staff members. Almost 74 percent of the sampled restaurants do not have recycling system they may not adopt the recycling system either due to low awareness and higher cost. In the sampled restaurants, 57 percent have strong Internal Environmental system and 46 percent restaurants faced penalty in previous months due to violation of law i.e. provision of unhygienic food, flies in kitchen, use of expired ingredients. About 46 percent of the sampled restaurants have dustbins present under tables for garbage and littering and 69 percent of the staff have knowledge regarding food practices.

3.3. Cross Tabs and Relationship Among Variables

The given section explains the cross tabs analysis and relationship of different variables with the help of graphs and tables.

3.4. Education of Manager and Internal Environmental System of Restaurant

The educated managers are more concerned about environmental conditions of restaurants and have strong internal environmental system. The ANOVA results reported in Table 2 show significant relationship between these variables. Faulk (2000) have shown the same results that environmental performance of restaurants depends to a large extent on education of managers.

Table 2

ANOVA Results for Relationship between Education of Manager and Internal Environmental System of Restaurant

Source of Variation	Sum of Squares	Df	Mean Square	F	Sig.
Between groups	3.960	2	1.980		
Within groups	4.611	32	.144	13.742	.000
Total	8.571	34			

3.5. Training of Staff and Internal Environmental System of Restaurant

Chi square test was applied results shown in Table 3 which shows that training of staff improves the environmental performance of restaurants. Restaurants having internal environmental system they made it compulsory for staff to attend training in which they get knowledge about food practices, ideal temperature of cooking, refrigeration and food borne diseases etc. The results show that there is significant relation between training of staff and Internal environmental system of restaurants.

Table 3

Training of Staff and Environmental Performance of Restaurant

	Internal Environmental System of Restaurant			
Training Availied by Staff Members	No	Yes	Total	Sig.
No	8	3	11	.020
Yes	7	17	24	
Total	15	20	35	
Chi-Square statistic: 5.844				

3.6. Relationship between Submission of Staff Medical Certificate to Management and Environmental System of Restaurant

The restaurants with strong internal environmental system made it mandatory for staff to submit their medical fitness certificate which is very important clause of Hotel and Restaurant Act. The results reported in Table 4 show that there is significant relationship between submission of staff medical certificate to management and Environmental system of restaurant.

Table 4

*Submission of Staff Medical Certificate to Management and
Environmental System of Restaurant*

Submission of Staff Medical Certificate to Management	Internal Environmental System of Restaurant		Total	Sig.
	No	Yes		
No	10	5	15	.017
Yes	5	15	20	
Total	15	20	35	

Chi-Square statistic: 6.076

3.7. Penalty and Internal Environmental System of Restaurants

It is also evident from Table 5 that imposition of penalty affects the internal environmental systems. With more penalties, the internal environmental system would get improved. Their relationship is significant.

Table 5

Penalty and Internal Environmental System Restaurants

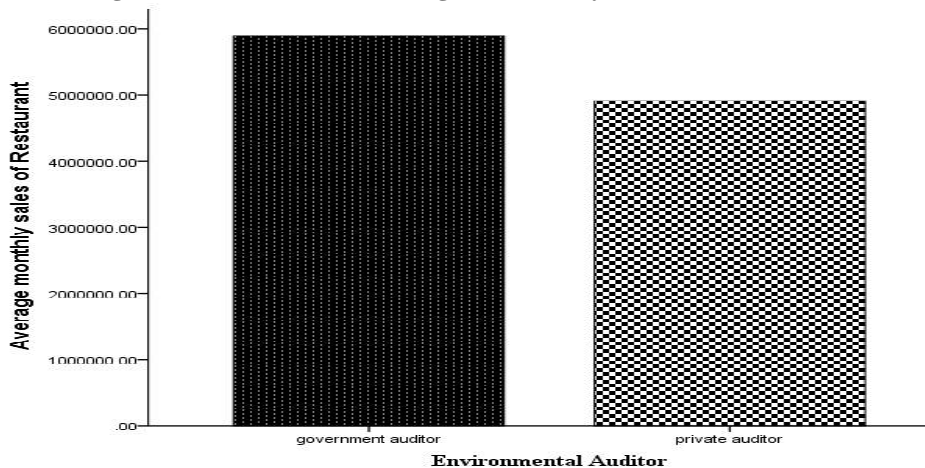
Internal Environmental System of Restaurant	Penalty Faced by Restaurant		Total	Sig.
	No	Yes		
No	2	13	15	.000
Yes	17	3	20	
Total	19	16	35	

Chi-Square statistic: 17.740

3.8. Type of Environmental Auditing and Monthly Sales of Restaurants

According to Figure 1, restaurants whose audit is being performed by Government Environmental Auditor have more sales as compared to those having private auditors because visit of government auditor is uninformed and unexpected for that reason the restaurant management has to maintain and take care of all necessary and obligatory environmental measures to lessen the risk of being penalised.

Fig. 1. Environmental Auditing and Monthly Sales of Restaurants



3.9. Relationship between Experience of Manager and Average Monthly Sale of Restaurant

The ANOVA results reported in Table 6 shows significant relationship between experience of managers and average monthly sales of restaurants. Restaurants with more experienced managers have high sales as compared to restaurants with low experienced managers. Because experienced managers have more knowledge related to food practices and they know better how to control system of restaurant in an appropriate way which leads to increase sales.

Table 6

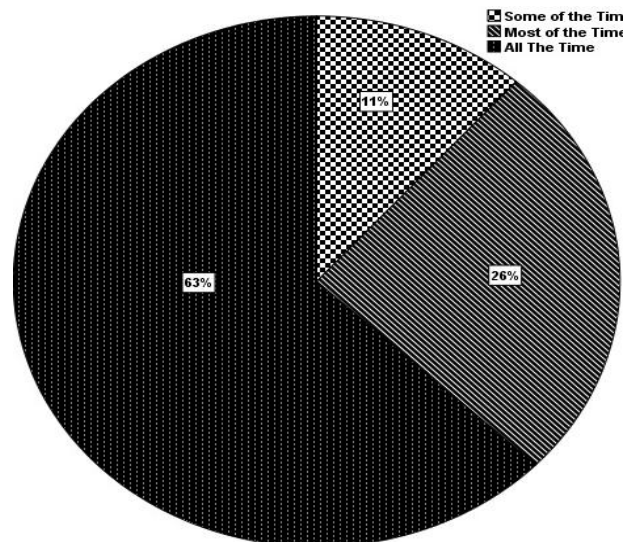
Relationship between Experience of Manager and Average Monthly Sales of Restaurant

Source of Variation	Sum of Squares	Df.	Mean Square	F	Sig.
Between group	928.802	14	66.343		
Within group	519.083	20	25.954	2.556	.027
Total	1447.886	34			

3.10. The State of Washing Hands before Cooking in Restaurants

The Figure 2 shows 63 percent of the staff washes hand all the time before they cook food and 26 percent of the staff washes their hands most of the time and 11 percent of the staff washes some of the time. As per the Hotel and Restaurant Act, the provision of healthy and hygienic food by the restaurant is necessary and provision of contaminated food will result in penalty of the restaurants. As figure shows that majority of the staff member having knowledge about the food borne diseases and wash their hand before cooking to avoid contamination of food. The staff of restaurants having low knowledge may avoid the washing hands before cooking. Washing the hands before cooking is preventive measure to avoid the contamination of food by dirty hands and germs.

Fig. 2. The State of Washing Hands before Cooking in Restaurants



3.11. Regression Analysis of the Determinants of Customer Willingness to Pay for Standard Food Items

The sections explain the results and analysis of the regression models for each category of food. Four regression models for Pakistani, Chinese, continental and Sea food items were estimated. Binary Logistic regression model is used to estimate the customer willingness to pay for standard food items. The regression is run separately for four standard food items i.e. Pakistani, Chinese, continental and sea food respectively.

3.12. Regression Analysis of the Determinants of Customer Willingness to Pay for Pakistani Food Item

The estimated results of CWTP for Pakistani food item are presented in table 7. In the regression results for Pakistani food item, Education and Income coefficients have positive and significant impact on WTP. These results are also in line with H.-H. Hu, Parsa, and Self (2010) because educated and high income group people are more willing to pay for standard food item. The Coefficient of Open Kitchen shows positive but statistically insignificant relationship with WTP. This may due to the fact that most of the customers do not care for investigating whether the kitchen is open in the restaurants or not.

The variable Cleanliness is statistically significant and positively related with WTP. People are willing to pay more if cleanliness is maintained in restaurant. Callan and Bowman (2000) also found that customers keep cleanliness at their top priority for selection of restaurant and they are willing to pay more for such restaurants.

Table 7

Regression Results of the Determinants of Customer Willingness to Pay for Pakistani Food Item

Dependent variable: Customer willingness to pay (CWTP) for Pakistani food item			
Variable	Coefficient	S. E	P-value
Education	1.017	.368	.006
Monthly income	.000	.000	.072
Open Kitchen	1.387	1.374	.313
Cleanliness	6.046	2.349	.010
Quality of service	4.919	1.834	.007
Noisy location	-.833	1.168	.476
Knowledge of Env. Laws	2.618	1.433	.068
Environment preference	4.615	2.001	.021
Constant	-25.757	8.615	.003
N=no of observations		100	

Quality of service has positive and significant impact on CWTP. The quality of service includes delivery time of meal. These results are also consistent with findings of Knutson (1988) who also found quality of service as positive and significant variable. The Coefficient of Noisy location variable is negative in present study. The reason behind that is people are not willing to pay for those restaurants which are near noisy location.

The Coefficients of Knowledge of environmental laws and Environment preference of customers are positive and statistically significant means that customer with more knowledge of environmental laws and customers who prefer environment for choosing restaurant are willing to pay more. These results are also consistent with X. Hu (2007) who indicated that customer knowledge about environment and sustainable practices are important determinants for customer choice of restaurant and their WTP.

3.13. Regression Analysis of the Determinants of Customer Willingness to Pay for Chinese Food Item

This Table 8 shows that coefficient of Education variable shows positive but statistically insignificant relationship with WTP. Monthly income shows positive and significant relationship with WTP. Means customers with high income are willing to pay more. In study of Income variable was also positive and significant. Open Kitchen variable is positive and statistically significant for Chinese food item. This may be the fact that the people are more concerned with open kitchen when using Chinese food item.

Cleanliness and Quality of service shows positive relationship with WTP. Cleanliness is also statistically significant variable as also found by Dolnicar and Otter (2003). Noisy location variable shows negative relationship with WTP because people are not willing to pay for food item which is given in restaurant near noisy location.

In case of Chinese food item Knowledge of environmental laws and Environmental preference found to be positive and statistically significant which means people who prefer Environment as their priority are willing to pay more, these results are in line with Perera and Pushpanathan (2015) who also found the same result.

Table 8

Regression Results of the Determinants of WTP for Chinese Food Item

Dependent Variable: Customer willingness to pay for Chinese food item			
Variable	Coefficient	S. E	P-value
Education	.366	.338	.279
Monthly income	.000	.000	.011
Open Kitchen	1.668	.903	.065
Satisfaction with Cleanliness	1.884	.786	.017
Quality of service	.677	.731	.355
Noisy location	-.904	.815	.267
Knowledge of Env. Laws	1.815	.781	.020
Environment preference	1.720	.808	.033
Constant	-4.620	3.920	.239
N=no. of observations		100	

3.14. Regression Analysis of the Determinants of Customer Willingness to Pay for Continental Food Item

In the regression results for Continental food given table 9, education, monthly income and open kitchen have positive and statistically significant impact on WTP. It means that people with more education and income are more willing to pay for this food item. If Kitchen is open for visit they are willing to pay more for such restaurant.

Cleanliness and quality of service shows positive impact on WTP. The coefficient of cleanliness is statistically significant variable means people are willing to pay more if restaurants take care of cleanliness.

Table 9

Regression Results of the Determinants of WTP for Continental Food Item

Dependent Variable: Customer willingness to pay Continental food items			
Variable	Coefficient	S. E	P-value
Education	1.698	.825	.040
Monthly income	.000	.000	.013
Open Kitchen	6.178	1.954	.002
Satisfaction with Cleanliness	1.926	1.253	.124
Quality of service	2.334	1.866	.211
Noisy location	-2.889	1.321	.029
Knowledge of Env. Laws	1.239	1.372	.367
Environment preference	5.533	2.301	.016
Constant	-24.908	10.645	.019
N=No.of observations		100	

Knowledge of environmental laws and Environmental preference has positive impact on WTP but coefficient of Knowledge of environmental laws is statistically insignificant. Same relationship was also found by Kasim (2004) who revealed that customers are knowledgeable and cared about the environment but they may not consider it as base for selection of restaurant.

3.15. Regression Analysis of the Determinants of Customer Willingness to Pay for Sea Food Items

The regression results for the willingness to pay for Sea food are given in table 10, showing that Education has significant impact on WTP. This result is in line with the findings of Bohdanowicz, *et al.* (2005) who found that education is significant variable and educated people are generally expected to be more concerned about such hygiene standard food items. So, they are willing to pay more. The variables monthly income shows positive and statistically significant impact on customers are willing to pay sea food items.

Table 10

Regression Results of the Determinants of WTP for Sea Food

Dependent Variable: Customer willingness to pay for Sea Food N=100			
Variable	Coefficient	S. E	P-value
Education	1.475	.710	.038
Monthly income	.000	.000	.107
Open Kitchen	3.548	1.428	.013
Satisfaction with Cleanliness	2.648	1.099	.016
Quality of service	.345	1.132	.760
Noisy location	-1.396	1.092	.201
Knowledge of Env. Laws	4.127	1.577	..009
Environment preference	3.575	1.431	.013
Constant	-25.035	10.301	.015
N=no of Observations		100	

The Coefficient of Open kitchen is positive and statistically significant. The Cleanliness also shows positive and statistically significant impact on WTP. Quality of service has positive but statistically insignificant impact on WTP.

Noisy Location has negative relationship with WTP which means that if restaurant is near noisy area customers are less willing to pay for food item of that restaurant. Likewise, for other food items the coefficient of Knowledge of Environmental laws and Environment preference shows positively and statistically significant relationship with WTP.

4. CONCLUSION AND RECOMMENDATION

The main objective of the study was to estimate the effect various factors influencing the customer willingness to pay for standard food items followed by assessing the awareness and adoption of Hotel and Restaurants Act 1987 in restaurants of Islamabad. Besides, to the impact of monitoring on revenues in restaurants was also estimated. For this purpose, primary data was collected through questionnaire. The major findings of the study are as follow:

- (i) The education of manager, trainings of kitchen staff and submission of medical certificates of staff are important factors in adopting Hotel & Restaurant Act, because the Act clearly prescribe to submit medical certificates and focuses on the provision of healthy and hygienic food by the managers and owners of the restaurant.
- (ii) Experienced and educated managers and staff of restaurants are more concerned about environmental conditions and have more knowledge about food borne diseases and food practices. The experience and educated manager and staff will be more informed about the current prevailing conditions of markets and prevailing environmental laws to avoid the violations of Law.
- (iii) Environmental performance of restaurants is positively influenced by its size and the restaurants whose audits are performed by government auditors have more sales as compare to private ones. Cleanliness and Quality of service has statistically significant and positive impact with customer willingness to pay for standard food item.
- (iv) Education and income of customers have positive relationship with their willingness to pay for standard food item. Noisy location of restaurant has negative relationship with customer willingness to pay and is statistically significant.

From the analysis it can be concluded that the restaurants which follow the clauses of Hotel and Restaurant Act such as taking care of sitting environment, cleanliness, hygiene of food, then the customers would be willing to pay more for their food and services. Those restaurants whose internal environmental system are strong such restaurants are more concerned about environmental and follow Hotel and Restaurant Act properly and customer also prefer such restaurants which ultimately will increase revenue of restaurants. The study further concludes that environmental laws need to be properly applied to the restaurants of Islamabad as from the findings we concluded that there were many of the environmental factors which are ignored in the restaurants and may result the

unhealthy and unhygienic food and services. To adopt Hotel and Restaurant Act, managers and staff should be given awareness and those restaurants who violate the Act, should be strictly monitored and punished.

Based on above findings it is recommended that:

- (i) The Restaurant Managers should consider customer preferences and choices which lead to their increased revenue.
- (ii) Kitchen staff should be provided trainings about health, hygiene, food production practices.
- (iii) The Hotel and restaurant Act lacks the clauses about the internal environmental system and internal environmental audit so the Act should provide clear statement to the Restaurant Managers about internal Environmental system.
- (iv) The production area should be made compulsorily open for all general public and should ban the washroom in production area.

There were few limitations of this research. Because of the shortage of time the survey was conducted for 35 restaurants which can be extended for more robust results. Moreover, the research only focused on the restaurants not the hotels and only the food and environmental laws application were assessed. The future research can be extended in this dimension.

Appendices

APPENDIX-A

Questionnaire for Managers

- (1) Name: _____
- (2) Age: _____
- (3) Education: _____
- (4) Income: _____
- (5) Experience years: _____
- (6) Name of your restaurant: _____
- (7) Average Monthly sales of Restaurant: _____
- (8) Total Number of Kitchen staff and catering staff in your Restaurant? _____
- (9) What is the Size of your restaurant?

Small Medium Large
- (10) Is there washroom near production area?

Yes No
- (11) Is the ventilation of washroom inside or outside? _____
- (12) How you treat the leftover food i.e. Distributed among

The poor The lower staff Treated as waste.
- (13) Is there any Internal Environmental system in your restaurant?

Yes No
- (14) If YES who perform the Environmental auditor?

Government auditor Private auditor

(15) Please provide the following information:

Environmental Laws	Requirement Fulfilled (Yes/No)	If No, then have your restaurant be fined or penalised due to violation in last one year (Yes/No)	If Yes, then specify the penalty
(i) Is there Implication of clause i.e. Submission of medical fitness certificates of staff every year			
(ii) Is there Implication of clause i.e. Standards of health, hygiene and comfort.			
(iii) Is there Implication of clause i.e. Protection of food and beverage			

APPENDIX-B

Questionnaire for Staff

- (1) Age:
- (2) Education:
- (3) Salary:
- (4) Experience years:
- (5) Do you have Knowledge related to food handling practices? (Clean, separate (don't cross contaminate) ,cooking temp and chilling temp)

Yes
No
- (6) Do you have Knowledge regarding ideal temperature of food storage, processing, freezing? (-17°C Ideal refrigeration temp) (74°C for poultry cooking)

Yes
No
- (7) Do you have Knowledge related to food borne diseases? (Diarrhea, Food poisoning, Stomach issues)

Yes
No
- (8) Do you wash your hands every time before cooking?

Yes
No
- (9) Have you provided the Medical fitness certificate to restaurant management?

Yes
No
- (10) Are you provided with the uniform, gloves, head cover in kitchen by the restaurant management?

Yes
No
- (11) Are there Recycle bins in lobby, meeting and other rooms?

Yes
No

- (12) Are there Recycling systems for waste like paper, plastic, glass?
 Yes No
- (13) How the waste is disposed of?
 Through sanitation authority of city through own restaurant sanitation system
- (14) What is the frequency of Waste disposal?
 Once a week Twice a week Daily

APPENDIX-C

Questionnaire for Customer

- (1) Name:
- (2) Age:
- (3) Education:
- (4) Gender:
- (5) Monthly Income:
- (6) Which of the following food items (meals) you like most? (Tick one option)
 a. Pakistani(des) b. Chinese c. Continental d. Sea food
- (7) Do you have any type of membership related to restaurant?
 Yes No
- (8) Is the kitchen open to you for the visit?
 Yes No
- (9) Are you satisfied with the cleanliness of sitting environment?
 Yes No
- (10) Is there any separate area for families?
 Yes No
- (11) If Yes are you satisfied?
 Yes No
- (12) Are you satisfied with the meal delivery time?
 Yes No
- (13) Do you find the location of restaurant scenically beautiful?
 Yes No
- (14) Is the restaurant near noisy area?
 Yes No
- (15) Is there separate area for smoking?
 Yes No
- (16) Do you have any knowledge about environmental laws and practices?
 Yes No
- (17) From environment point of view about which you are more concern?
 Food Sitting environment location of hotel
- (18) If strict environmental laws and practices are applied to the restaurant are you willing to pay more for this food item?

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