

## **SOCIO-ECONOMIC DETERMINANTS OF ENVIRONMENTAL DEGRADATION: A CASE STUDY OF DISTRICT MUZAFFARGAR**

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***Abstract-**The objective of this research study is to measure the impact of different socioeconomic factors and environmental degradation in district Muzaffargarh. We developed a questionnaire to collect primary data from 200 randomly selected households. We used Ordinary Least Square (OLS) Method to analyze data. Our results show that environmental degradation decreases with the increase in household income whereas presence of garbage heaps, lack of facility of garbage collection by municipality, use of wood as cooking fuel, smoking, lack of the facility of hand wash facility, cooking in open area or, in multiuse rooms, using open toilet, and lack of cleanliness of toilets daily have significant positive impact on environmental degradation. This study suggests that the importance be placed upon awareness about environmental degradation factors and collection of garbage by Municipality can reduce environmental pollution.*

***Keywords:** Environmental degradation, Garbage Heaps, Fuel Consumption.*

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## **1. INTRODUCTION:**

### **1.1 Background of the Study:**

Socioeconomic indicators reflect information on learning, gender, poverty, accommodation, facilities, occupation and other economic issues. There is clear relation between health of human beings and economic development of a nation. The economic condition of a nation gets better, if health status of its citizens improve. Developing the health conditions of a country also accelerate the process of economic development due to its active labor participation as a factor of production. Many development models propose that human capital plays a vital role in development process. Hence, earning is a defining factor in case of disease anticipation and poor living situations of families. If environmental situations get better than we can easily predict that occurrence of diseases will be lessening, and consequently a better lifespan be attained. World Health Organization reports (2002) states that the domestic smoke is responsible for 2.7% of the overall diseases.

### **1.2 Problem Statement:**

It has observed that Pakistan is placed among high environmental degraded countries. In case of district Muzaffargarh, it has many industries, thermal power stations and Pak Oil Refinery which causes environmental pollution. On the other hand, household environments are also effected on large scale by ignoring other pollutants such as garbage heaps around the homes, unavailable proper facility of garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, use of wood as a fuel, smoking habit, toilet non-cleanliness of toilets on daily. these factors also affect households' environment.

### **1.3 Objectives of the Study:**

The main objectives of study are:

1. To study the socio-economic determinants of environmental degradation.
2. To measure the impact of environmental degradation on economic growth.
3. To suggest the ways how to prevent environmental degradation.

#### **1.4 Scope of the Study**

This study is important for following reasons:

- ▶ It will help the society to prevent environmental degradation and improve the health condition of people in district Muzaffargarh.
- ▶ It will also help to the policy maker to resolve the problem in the light of the results of this study.
- ▶ This study will make the clear picture of socioeconomic conditions relating To environmental issues at household level.

## **2. LITERATURE REVIEW:**

### **2.1 Importance of Literature Review:**

Chaudhry (2013) estimated and contribution of health results to economic development in Pakistan. Findings in the study show that health expenses and real gross domestic product were absolutely linked because individuals spend more in health so when diseases reduced then people participation becomes more in economic events. Mohammed (2014) analyzed the burden of Diarrheal diseases among Children under Five Years of age in Ethiopia. This study showed that maternal status had a critical issue to counteracting diarrheal grimness. Okungbowa (2014) investigated the Globalization and Poverty Rate in Nigeria and his findings showed that there's an inverse relationship between openness on the level of poverty. Yadav (2014) examined socioeconomics factor for malaria spreading threat in an endemic primary health center in Assam, India. His results showed that malaria occurrence was higher among participants who had lower incomes. Polimeni (2016) explored socio-economic factors that impact waterborne

diseases in Jordan. He concluded that returns have less effect on the occurrence of infective diseases. Noor (2017) investigated the awareness of mothers about diarrhea in Pakistan and it can be concluded that knowledge of mothers regarding control of diarrheal diseases is inadequate especially in mothers of specially in low income families. Quarato (2017) measured the air pollution and public health and found air pollution like particulate matter is able to increase the risk of allergic and respiratory diseases in occupationally exposed workers. Vuong (2017) analyzed the mental and socioeconomic aspects upsetting community supportability through effects on apparent well creatures care quality and open well creatures. It had been built up that better access to well creature's related information with restorative consideration from family and companions emphatically impact a patient's assessment of well creature's care benefit quality.

Awan (2015) stated that hospital wastes generate numerous chronic diseases. He pointed out that there are not proper arrangements for dumping hospital wastage.

### **2.3 Distinction of the Study:**

This study has intended to measure the impact of different socioeconomic factors of environmental degradation in district Muzaffargarh. Furthermore. No other researcher has so far conducted research on this topic in District Muzaffargarh. So it will be the first one in its nature.

## **3. THEORETICAL FRAMEWORK:**

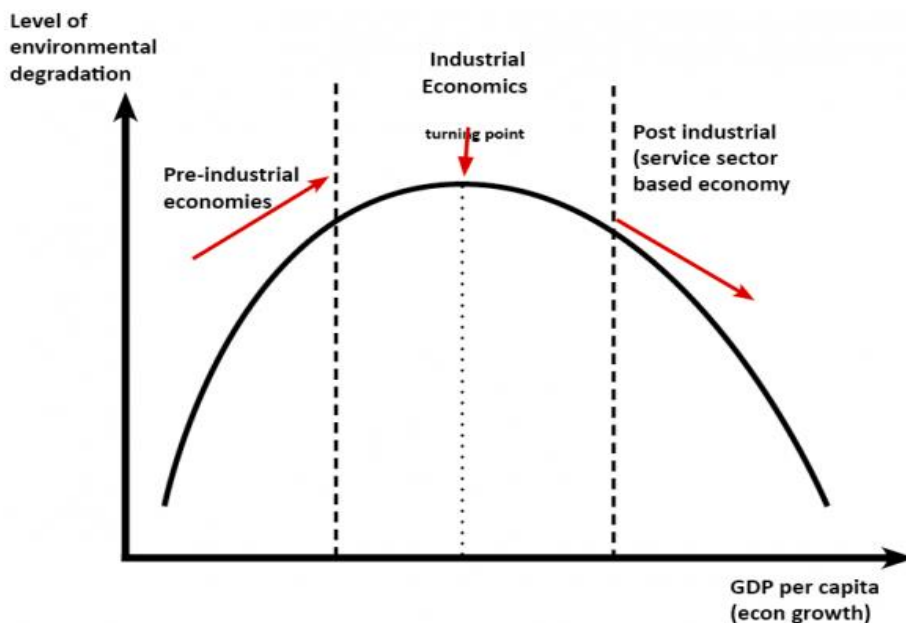
### **3.1. Environmental Kuznets curve:**

This curve states when the economic growth is increased environmental degradation will increase. But after sometime when trickledown effect is reached at bottom level of society environmental pollution will start declining.

Kuznets curve has two aspects negative and positive, in its early phase when it has applied on production sector, it is enhancing environmental pollution but after some time in second phase it has become parallel to production level and

environmental status. But in its third phase manufacturing sector decline and service sector grows and consequently environmental pollutions declines. The phenomenon has been shown in the Figure 1.

Figure 1: Environmental pollution increases during preindustrial phase, stagnant in industrial phase and decline in post industrial phase.



### 3.2 Hypothesis:

The following hypotheses were developed.

#### Hypothesis 1

$H_0$  = There is no significant relationship between environmental degradation and household income characteristics.

$H_1$  = There is significant relationship between environmental degradation and household income characteristics.

#### Hypothesis 2

$H_0$  = There is no significant relationship between environmental degradation and garbage heaps characteristics.

$H_1$  = There is significant relationship between environmental degradation and garbage heaps characteristics.

### **Hypothesis 3**

$H_0$  = There no a significant relationship between environmental degradation and garbage collection characteristics.

$H_1$  = There is significant relationship between environmental degradation and garbage collection characteristics.

### **Hypothesis 4**

$H_0$  = There is no a significant relationship between environmental degradation and wood as fuel characteristics.

$H_1$  = There is significant relationship between environmental degradation and wood as fuel characteristics.

### **Hypothesis 5**

$H_0$  = There is no significant relationship between environmental degradation and smoking habit characteristics.

$H_1$  = There is significant relationship between environmental degradation and smoking habit characteristics.

### **Hypothesis 6**

$H_0$  = There is no a significant relationship between environmental degradation and hand wash facility characteristics.

$H_1$  = There is significant relationship between environmental degradation and hand wash facility characteristics.

### **Hypothesis 7**

$H_0$  = There is no a significant relationship between environmental degradation and open air kitchen characteristics.

H<sub>1</sub> = There is significant relationship between environmental degradation and open air kitchen characteristics.

**Hypothesis 7**

H<sub>0</sub> = There is no significant relationship between environmental degradation and multipurpose room for kitchen characteristics.

H<sub>1</sub> = There is significant relationship between environmental degradation and multipurpose room for kitchen characteristics.

**Hypothesis 8**

H<sub>0</sub> = There is no significant relationship between environmental degradation and open toilet characteristics.

H<sub>1</sub> = There is significant relationship between environmental degradation and open toilet characteristics.

**Hypothesis 9**

H<sub>0</sub> = There is no significant relationship between environmental degradation and toilet cleanliness characteristics.

H<sub>1</sub> = There is significant relationship between environmental degradation and toilet cleanliness characteristics.

**4 RESEARCH METHODOLOGY:**

**4.1. Study Area Profile**

Muzaffargarh is one district of Punjab out of thirty six districts. The district Muzaffargarh consists of four tehsils Muzaffargarh, Kot Adu, Ali Purr and Jatoi. It situated between the bank of the Indus River and Chenab River. It spreads over an area of approximately 8,250 square kilo meters. The overall population of the district Muzaffargarh is 4322009 in 2018.

**4.2: Sampling of study:**

Two hundred (200) respondents were selected as sample from four tehsils of district Muzaffargarh. Respondents from all tehsils. The detail is as, 66 from Muzaffargarh, 70 from Kot Adu, 36 from Ali Purr, and 28 from Jatoi.

#### **4.3. Type of Data:**

This study has used Primary data which was collected through questionnaire and interview. During sampling so many problems faced, like unavailability of respondents then next visit is done to collect the data. Low level of education and unawareness of farmers makes the data collection difficult but data is collected through the proper interpretation of questions and making clear all the aspects of questionnaire. All the questions are about personal information (age, education, experience etc.) and environmental related information (about major causes and infections).

The questionnaire was designed for the collection of data about the operations of selected variables such as household income, family size, education gender and environmental determinants were collected. Pre-testing of questionnaire was conducted for few respondents before finalizing to check the weakness. Pre-testing provides an opportunity to the researcher to add those variables which were missing and remove the variables which are not needed. As a result of pre-testing some changes in questionnaire were made.

#### **4.4 Specification of Model: -**

The functional form of econometric model is give below: -

$$\begin{aligned} \text{Environmental degradation} = & \beta_{_1} + \beta_{_2}(\text{HHI}) + \beta_{_3}(\text{G\_heaps}) + \beta_{_4}(\text{G\_col}) + \\ & \beta_{_5}(\text{HWF}) + \beta_{_6}(\text{MPR}) + \beta_{_7}(\text{OAK}) + \beta_{_8}(\text{Fuel}) + \beta_{_9}(\text{smok}) + \beta_{_10}(\text{T\_cle}) + \\ & \beta_{_11}(\text{T\_typ}) + \mu \end{aligned}$$

Where,

HHI = Average household income from all sources for a month



G\_heaps = Garbage heaps lying uncollected outside the house or collected properly dummy variables 1 and 0, respectively.

G\_col = a household have facility or not to garbage collected by municipality.

HWF = hand wash facility available near to toilet or not.

MPR = a household used multipurpose room in which cooking take place or they have proper kitchen.

OAK = a household use open air kitchen for cooking or used proper kitchen.

Fuel = the household using wood or other type of fuel for cooking.

Smok = any member smoke habit in household or not.

T\_cle = the household have attitude to clean toilet daily or not.

T\_typ = a household have what type of toilet system, open toilet or flush type.

And " $\beta_1$ " is intercepted term and all the other  $\beta$ 's are coefficients of the variables of the model, where, " $\mu$ " is a normally distributed error term

## **5. RESULTS AND DISCUSSIONS:**

### **5.1 Descriptive Statistics**

At this stage we performed descriptive analysis which explains simple averages, median, minimum and maximum statistics. The study analyzes all the variables in descriptive statistics, which have been shown in Table 1:-

Table 1: Descriptive statistics

	HHI	G_HEAP	G_COL	HWF	MPR	OAK	FUEL	SMOK	T_CLE	T_TYP
Mean	27100.00	0.570000	0.855000	0.155000	0.380000	0.600000	0.565000	0.255000	0.150000	0.085000
Median	25000.00	1.000000	1.000000	0.000000	0.000000	1.000000	1.000000	0.000000	0.000000	0.000000
Maximum	100000.0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
Minimum	10000.00	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	14625.30	0.496318	0.352984	0.362813	0.486604	0.491127	0.497001	0.436955	0.357967	0.279582
Skewness	1.601843	-0.282785	-2.016468	1.906579	0.494451	-0.408248	-0.262225	1.124211	1.960392	2.976172
Kurtosis	6.523943	1.079967	5.066142	4.635045	1.244482	1.166667	1.068762	2.263851	4.843137	9.857602
Jarque-Bera	189.0148	33.38662	171.1126	143.4463	33.83143	33.56481	33.37274	46.64432	156.4142	687.1426
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	5420000.	114.0000	171.0000	31.00000	76.00000	120.0000	113.0000	51.00000	30.00000	17.00000
Sum Sq. Dev.	4.26E+10	49.02000	24.79500	26.19500	47.12000	48.00000	49.15500	37.99500	25.50000	15.55500
Observations	200	200	200	200	200	200	200	200	200	200

Descriptive analysis has been made through the statistical software E-views. We have estimated range, minimum value, maximum value, mean, standard deviation, variance, skewness and kurtosis to explain the entire data. Table .1 show overall trend of variables.

**Mean:** On the average household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 27100 rupees, 0.57, 0.855, 0.155, 0.380, 0.600, 0.565, 0.255, 0.150 and 0.0850 units, respectively.

**Median:** On the median, trend of the data as household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 25000 rupees, 1.0000, 1.0000, 0.0000, 0.0000, 1.0000, 1.0000, 0.0000, 0.0000 and 0.0000 units, respectively.

**Maximum:** On the maximum values of the data as household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using

of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 100000 rupees, 1.0000, 1.0000, 1.0000, 1.0000, 1.0000, 1.0000 and 1.0000 units, respectively.

**Minimum:** On the minimum values of the data as household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 10000 rupees, 0.0000, 0.0000, 0.0000, 0.0000, 0.0000, 0.0000 and 0.0000 units, respectively.

**Standard Deviation:** The standard deviation which shows how much the members of a group differ from the mean value for the groups such as household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 14625 rupees, 0.496318, 0.352984, 0.362813, 0.486604, 0.491127, 0.0497001, 0.436955, 0.357967 and 0.279582 units, respectively.

**Skewness:** The skewness is a measure of symmetry, or more precisely, the lack of symmetry, the skewness of household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 1.601843, -0.282785, -2.016468, 1.906579, 0.494451, -0.408248, -0.262225, 1.124211, 1.960392 and 2.976172 units, respectively.

**Kurtosis:** The value of kurtosis is an amount of the tailed of the possibility supply of a real valued haphazard variable. The kurtosis of several univariate normal supplies is three. It is common to compare the kurtosis of a distribution to this value. Distributions with kurtosis less than three are said to be platykurtic and distributions with kurtosis greater than three are said to be leptokurtic. The value of kurtosis of household income, garbage heaps, garbage collection, un-availability

of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type are 6.523943, 1.079967, 5.066142, 4.635045, 1.244482, 1.166667, 1.068762, 2.263851, 4.843137 and 9.857602 units, respectively.

**Jarque-Bera:** Jarque-bera is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. The values of household income, garbage heaps, garbage collection, un-availability of hand wash facility near toilet, using of multipurpose room, open air kitchen, wood as a fuel, smoking habit, toilet cleanliness on daily basis and toilet type in jarque bera test are 189.0148, 33.38662, 171.1126, 143.4463, 33.83143, 33.56481, 33.37274, 46.64432, 156.4142 and 687.1426 units, respectively.

## **5.2 correlation Analysis:**

**Table 2: Correlation Matrix**

Covariance Analysis: Ordinary  
 Date: 08/19/18 Time: 10:26  
 Sample: 1200  
 Included observations: 200

Correlation Probability	HHI	G_HEAP	G_COL	HWF	MPR	OAK	FUEL	SMOK	T_CLE	T_TYP
HHI	1.000000 ----									
G_HEAP	-0.078505 0.2692	1.000000 ----								
G_COL	-0.299901 0.0000	0.158619 0.0249	1.000000 ----							
HWF	-0.175293 0.0130	-0.074510 0.2944	0.137137 0.0528	1.000000 ----						
MPR	0.035587 0.6169	0.159798 0.0238	0.000585 0.9934	0.063189 0.3740	1.000000 ----					
OAK	-0.102841 0.1473	0.012369 0.8620	0.098554 0.1650	0.039482 0.5788	0.239707 0.0006	1.000000 ----				
FUEL	-0.392191 0.0000	-0.028724 0.6864	0.211536 0.0026	0.236461 0.0007	-0.102646 0.1481	0.271750 0.0001	1.000000 ----			
SMOK	-0.086575 0.2229	0.067892 0.3395	0.045449 0.5228	0.098104 0.1670	0.038287 0.5904	-0.014050 0.8435	0.050560 0.4771	1.000000 ----		
T_CLE	0.000960 0.9892	0.082024 0.2482	-0.105389 0.1375	0.207002 0.0033	0.046158 0.5163	0.114332 0.1069	0.086148 0.2252	-0.020882 0.7691	1.000000 ----	
T_TYP	-0.047560 0.5036	0.011226 0.8746	-0.180000 0.0108	0.117162 0.0985	0.167694 0.0176	0.065874 0.3540	0.086614 0.2226	-0.013780 0.8464	0.173226 0.0142	1.000000 ----

This matrix shows one by one relationship between independent and dependent variables. Correlation matrix detects the nature of association between two variables and how variables are related to each other. This table also shows issues of Multi-collinearity

**Household income:** In the row of household income in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.40. Household income has significant correlation with garbage collection, hand wash facility and fuel. Household income has insignificant correlation with garbage heaps outside the house, using multipurpose room, smoking habit, open toilet and toilet cleanliness.

**Garbage heaps:** In the row of garbage heaps in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.16. Garbage heaps has

significant correlation with garbage collection, using multipurpose room. Garbage heaps outside the house has insignificant correlation with hand wash facility, open air kitchen, and wood as a fuel, smoking habit, open toilet and toilet cleanliness.

**Garbage collection:** In the row of garbage collection in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.22. Garbage collection has significant correlation with garbage collection, hand wash facility, fuel and open toilet. Unavailable facility of garbage collection has insignificant correlation with multipurpose room, open air kitchen, smoking habit and toilet cleanliness.

**Hand cleaning facility:** In the row of hand cleaning facility in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.24. Hand wash facility has significant correlation with fuel, toilet cleanliness and open toilet. Hand cleaning facility has insignificant correlation with multipurpose room, open air kitchen and smoking habits

**Multipurpose Room:** In the row of multipurpose room in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.24. Multipurpose room has significant correlation with open air kitchen and open toilet. Multipurpose room has insignificant correlation with wood as a fuel, smoking habit and toilet cleanliness.

**Open air kitchen:** In the row of open air kitchen in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.27. Open air kitchen has significant correlation with fuel. Open air kitchen has insignificant correlation with smoking habit, toilet cleanliness and open toilet.

**Fuel (wood):** In the row of wood as a fuel in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.09. Fuel has insignificant correlation with smoking habit, toilet cleanliness and open toilet

**Smoking habit:** In the row of smoking habit in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.021. Smoking habit has insignificant correlation with toilet cleanliness and open toilet.

**Toilet cleanliness:** In the row of toilet cleanliness in this matrix verify no problem of Multi-collinearity, as values of correlation are less than 0.17. Toilet cleanliness has insignificant correlation with toilet cleanliness and open toilet.

### 5.3 Regression Analysis

In this stage the study estimates regression to measure the effect of independent variables on dependent variable. The study used ordinary least squares (OLS) method to estimates these relationships.

Table 3 Results of regression Analysis

Dependent Variable: ENVIRONMENT  
 Method: Least Squares  
 Date: 08/19/18 Time: 10:14  
 Sample: 1 200  
 Included observations: 200

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.235549	0.024542	9.597620	0.0000
HHI	-1.00E-06	4.25E-07	-2.362010	0.0192
G_HEAP	0.080201	0.011597	6.915927	0.0000
G_COL	0.065406	0.017299	3.780976	0.0002
FUEL	0.091800	0.012974	7.075487	0.0000
SMOK	0.083683	0.012727	6.575039	0.0000
HWF	0.042564	0.016408	2.594012	0.0102
OAK	0.099257	0.012222	8.121048	0.0000
MPR	0.030174	0.012234	2.466341	0.0145
T_TYP	0.047746	0.020827	2.292544	0.0230
T_CLE	0.091666	0.016240	5.644433	0.0000
R-squared	0.733276	Mean dependent var	0.478636	
Adjusted R-squared	0.719163	S.D. dependent var	0.146240	
S.E. of regression	0.077498	Akaike info criterion	-2.223691	
Sum squared resid	1.135133	Schwarz criterion	-2.042283	
Log likelihood	233.3691	Hannan-Quinn criter.	-2.150278	
F-statistic	51.95967	Durbin-Watson stat	1.564875	
Prob(F-statistic)	0.000000			

**Household income:** If household income increases one thousand rupees then environmental degradation will decrease by one percent, so household income and environmental degradation has negative relation. HHI is significant at 2% level.

**Garbage Heaps:** If garbage heaps increase one unit then environmental degradation will rise by 8 percent, so garbage heaps and environmental degradation are positively linked in this model. It is significant at 0.00% level.

**Garbage Collection:** If garbage is not collected by municipality than garbage increases one unit then environmental degradation will rises by 65 percent, so garbage collection and environmental degradation has strong positive relation. It is significant at 0.02% level.

**Fuel:** If wood using as a fuel increases one unit then environmental degradation will rises by 9 percent, so wood fuel and environmental degradation are positively linked in this model. It is significant at 0% level.

**Smoking Habit:** If smoking habit increases one unit then environmental degradation will rise by 8 percent, so smoking habit and environmental degradation are positively linked in this model. It is significant at 0% level.

**Hand cleaning facility:** If washing/cleaning facility of hand near toilet availability increases one unit then environmental degradation will declined by 4 percent, so hand washing/cleaning facility and environmental degradation are negatively linked in this model. Hand washing/facility is significant at 1.02% level.

**Open Air Kitchen:** If open air kitchen increases one unit then environmental degradation will rise by 9 percent, so open air kitchen and environmental degradation are positively linked in this model. It is significant at 0% level.

**Multipurpose room:** If uses of multipurpose room increases one unit then environmental degradation will rise by 3 percent, so multipurpose room and environmental degradation are positively linked with in this model. Multipurpose room is significant at 1.45% level.

**Open toilet:** If open toilet increases one unit then environmental pollution will rise by 4 percent, so open toilet and environmental degradation are positively linked in this model. It is significant at 2.3% level.



**Toilet cleanliness:** If toilet un-cleanliness habit increases one unit then environmental degradation will rise by 9 percent, so toilet cleanliness and environmental degradation are positively linked in this model. It is significant at 0% level.

**R-Squared:** R-squared shows the goodness of fit of the model. It is 73.33%, which indicates that the model is good and all variables have strong relationship.

**Probability (f-stat):** The difference between probability of t-statistic and f-statistic are the significance or insignificance of variables and modes, respectively. The model is significant because the probability value of F-Statistics is less than 10%.

**Durban-Watson:** According to Durban-Watson test, in this model auto correlation exists. Because the rule of thumb is, “if values 1.95 to 2. Then there is no autocorrelation”.

**Akaike criteria:** The value of Akaike criteria information in this model is -2.2237

## **6. CONCLUSION:**

This study applied simple ordinary least square regression method to estimate the socioeconomic determinants and ecological degradation in district Muzaffargarh Punjab. This study used environmental degradation as a dependent variable. The independent variables for environmental degradation were HHI, education, toilets type (which mean flush system or open ground), toilet uncontaminated on daily basis, hand cleaning facility near the toilets, garbage heaps about homes, and cooking activities outside the proper room, cooking activities in multiuse rooms, cooking fuels (wood) instead of LPG and bio gas for cooking, smoking habit and proper garbage collection method.

The key conclusion of the study is as under: -

Household income has negative relationship with environmental degradation. Garbage heaps around the home has positive relationship with environmental

degradation. Non-Proper garbage collection or lack of facility of garbage collection show positive relationship with the environmental degradation. Toward expanding the health effects related with fuel normally used for cooking, the easiest clarification can be to boost new energy resources. Smoking habit has positive relationship with environmental degradation. Availability of hand wash facility near toilet has negative relationship with environmental degradation. Open air kitchen has positive relationship with environmental degradation. This relationship also showed statistically significant. Cooking practices in multipurpose room has positively relation with environmental degradation. Open toilet has positively linked with environmental degradation. Toilet un-cleanliness on daily basis has positively linked with environmental degradation. We conclude that we can reduce environmental degradation by dumping or burning garbage or using clean energy resources.

#### **7. RECOMMENDATIONS:**

- ▶ The families having high income must focus on domestic environmental issues. More income should be utilized for decreasing environmental degradation, which can significantly reduce environmental problems.
- ▶ We should control garbage heaps properly to reduce environmental degradation.
- ▶ Garbage collection must be managed and monitored on daily basis to decrease environmental degradation prevent spreading of diseases.
- ▶ Toward expanding the health effects related with fuel normally used for cooking, in the study if there is other fuel than wood there are minimal health issues relating, the easiest clarification can be to boost new energy resources.
- ▶ Smoking should be banned on domestic and public places for decreasing environmental degradation; smoking has powerful effect on degrading the

domestic environment, so smoking should be minimized which can significantly reduce environmental health issues.

► The hand wash facility must be provided near toilets. It will bring positive effect on health of households.

► The use of open air kitchen should be minimized to minimize health issues. Kitchen should be separated to reduce such health issues.

► Proper toilet facility should be provided because if there is proper toilet facility, there will be less health problems. Toilet should be cleaned on daily basis to reduce growing health problems.

#### **8. LIMITATIONS OF STUDY:**

- Data is limited as proportion to population.
- The respondents not cooperate because they do not have proper knowledge about the environmental problems and their effects on health.
- Resources are limited to conduct this research study on wide scale and face difficulty to collect information.
- Environmental issues are not important for poor peoples and they do not give importance to them.
- Government policies are failed to publicized and control environmental related health issues.
- The role of non-government organizations is also missing to improve environmental problems.

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### CONTRIBUTION OF AUTHORS AND CONFLICT OF INTEREST

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This research work was carried between collaboration of two authors. **Author 1: Prof. Dr. Abdul Ghafoor Awan** is his first Ph.Ds in Economics from Islamia University of Bahawalpur-Pakistan and second in Business Administration from University of Sunderland, U.K. He contributed in this research paper by way of guiding author first about title selection, data collection and statistical technique. He edited and gave final shape to the manuscript. In order to know about his fields of research please look at his Web of Science Researcher ID  [M-9196 2015](#) or his [Profile at Google scholar](#).

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Both authors read the manuscript carefully and declared no conflict of interest with any person or institution.

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