**SRI DHARMASTHALA MANJUNATHESHWARA**

**COLLEGE (AUTONOMOUS)UJIRE-574240**

**(RE-ACCREDITED ‘A’ GRADE WITH 3.61 CGPA BY NAAC)**

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**ASTUDENT RESEARCH PROJECT ON**

**“IMPACT OF PLASTIC USAGE ON ENVIRONMENT”**

**Submitted by**

|  |  |  |
| --- | --- | --- |
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**Submitted to**

**Department of Statistics**

**SDM College (Autonomous), Ujire**

**Under the Guidance of**

**Dr.Savitha Rao**

**Department of Statistics**

**SDM College (Autonomous), Ujire2020-2021**

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**CERTIFICATE**

This is to certify that the following B.sc ‘A’ students have completed the student research project titled “**IMPACT OF PLASTIC USAGE ON ENVIRONMENT**” in statistics as a co-curricular activity under the guidance of Dr.Savitha Rao, Dept of Statistics, SDM College Ujire during the year 2020-21.

**TEAM MEMBERS**

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**DECLERATION**

We hereby declared that this student project entitled “**IMPACT OF PLASTIC USAGE ON ENVIRONMENT**” has been prepared by us during the year 2020-21 under the guidance of Dr.Savitha Rao, Dept. of Statistics, SDM College, Ujire.

We also declare that this by us is the result of our own efforts.

Date:

Place:

**TEAM MEMBERS**

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We extend our sincere thanks to our guide Dr.Savitha Rao, Dept. of Statistics for her valuable guidance and constant support which has helped us to complete the project successfully.

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**PREAMBLE**

To promote the statistical interest at undergraduate level, SDM College, Ujire has introduced “Student research Project” for all degree students. A team of 3 students of 3rd B.sc has chosen to do research on Statistics. The Topic chosen is “**IMPACT OF PLASTIC USAGE ON ENVIRONMENT”**.

**TEAM MEMBERS**

|  |
| --- |
| Shwetha T.S |
| Spoorthi K |
| Sushmitha |

**INTRODUCTION**

It has been proven through recent studies, that usage of plastic has increased tremendously. Plastics are made of non degradable material and are a problem to the environment. Plastic items are said to take around thousand years to decompose and hence if the usage of plastic continues, it will be major concern for everyone. Thus, a lot of governments are taking up initiatives to curb the usage of plastic items by the citizens. However, there are some parameters which are still restricting the switch to degradable material. In order to understand the reason why, use of plastic survey will give an insight to the researchers with the factors that are influencing public’s choice.

Impact of plastic usage on environment survey questions is a questionnaire to understand the perception of the public on abolishing the use of plastic. This survey aims to identify the factors that influence the use of plastic and what are the reasons behind not choosing to abolish them.

**OBJECTIVES**

1)To understand the perception of public on eradicating the use of plastics.

2)To check whether people aware of plastic pollution.

3)To know the amount of plastic people use on a daily basis.

4)To know the extent of plastic pollution in the area in which people live.

5)To find the different ways to reduce plastics.

6)To check whether people reuse plastic at home.

7)To know people’s priority to control the usage of plastic bags.

8)To understand people’s preference of plastic bags.

9)To find out various techniques to dispose plastic material.

10)To know the opinion of public on effects of plastic increasing.

**METHODOLOGY**

A sample of 100 students was chosen using simple random sampling without replacement method.

**COLLECTION OF DATA**

Opinion of 100 selected students of different gender and presented in percentage.

**ANALYSIS OF DATA**

**1.Are you aware of plastic pollution?**

|  |  |  |
| --- | --- | --- |
| Opinion | Yes | No |
| Responses | 98 | 2 |

**Conclusion:By this graph,it is found that 98% of people aware about plastic pollution.**

**2.Number of plastic bags do you/your family use per week**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Opinion | >10 | 7-10 | 4-6 | 1-3 | 0 |
| Responses | 7 | 9 | 20 | 53 | 11 |

H0:Number of plastic bags using per week is independent.

H1:Number of plastic bags using per week is associated.

E==20

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Observed Frequency(Oi) | Expected Frequency(E) | Oi-E | (Oi-E)2 | (Oi-E)2/E |
| 7 | 20 | -13 | 169 | 8.45 |
| 9 | 20 | -11 | 121 | 6.05 |
| 20 | 20 | 0 | 0 | 0 |
| 53 | 20 | 33 | 1089 | 54.45 |
| 11 | 20 | -9 | 81 | 4.05 |

Under the test statistic Y=73 we reject H0 if Y>Χ2 at 5% level of significance.

We observe that Y>11.070

We accept H1 at 5% level of significance.

**Conclusion: Number of plastic bags using per week is associated.**

**3.Extent of plastic pollution where you live in?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Opinion | Large | Some | Not at all | Moderate |
| Responses | 8 | 58 | 14 | 20 |

**Conclusion:By comparing pie chart 58% of people say that there are some extent of plastic pollution in their place.**

**4.Measure you adopt to avoid plastic**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Opinion | Cloth bags | Paper cups | Glass bottles/Containers | Other |
| Responses | 85 | 7 | 5 | 3 |

**Conclusion:85% of the people adapt cloth bags to avoid plastic more than paper cups and other.**

**5.Do you reuse plastic at home?**

|  |  |  |
| --- | --- | --- |
| Responses/Opinion | Yes | No |
| Male | 15 | 35 |
| Female | 9 | 41 |

To test the proportion of people who reuse at home is less than 50%

n=100 x=48 p= ==0.24

p0=0.50 q0=1-0.50=0.50

H0:The proportion of people who reuse at home is equal to 50%

H1:The proportion of people who reuse at home is less than 50%.

Z=-0.26/√0.0025

Z=-0.26/0.05

Z=-5.2

The test procedure suggest that reject H0 if Z>Zα

Where Zα is obtained using the size condition that is PH0[Z< Zα]=

From standard normal distribution table Zα =-1.645 at 5% level of significance that is reject H0 at 5% level of significance.

Hence we observed that Z<- Zα that is Z<-1.645 at 5% level of significance that is reject H0 at 5% level of significance.

Hence the decision is the proportion of people who reuse at home is less than 50%.

**6.Your priority to control usage of plastic bags**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Opinion | | Extra charge for plastic packaging | Ditching the plastic all together | Switching to reusable | Other |
| Responses | Male | 10 | 5 | 30 | 5 |
| Female | 4 | 7 | 35 | 4 |

**Conclusion:Both males and females opinion to control the usage of plastic bags is switching to reusable.**

**7.While shopping I prefer to**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Opinion | Get plastics provided by supermarket | Bring my own reusable bag | Carry the goods by hand | Other |
| Responses | 10 | 81 | 9 | 0 |

**Conclusion: 81% of people bring their own reusable bag while shopping.**

**8.Your preference of plastic products as**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Opinion | They are cheap | They are light in weight | They are easily available | Other |
| Responses | 16 | 24 | 53 | 7 |

**Conclusion:53% of people conclude that plastic products are easily available.**

**9.Your technique to dispose plastic material**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Opinion | | Open dumping | Burying | Burning | Other |
| Responses | Male | 17 | 30 | 42 | 11 |
| Female | 12 | 24 | 45 | 19 |

**Conclusion:By observing bar diagram, we conclude that both males and females choose burning method to dispose plastic materials.**

**10.Your opinion on effect of plastic, which increases**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Opinion | Animal Death | Human health problems | Blockage of sewage system | Destroying the natural beauty of environment |
| Responses | 10 | 23 | 2 | 65 |

**Conclusion:65% of people conclude that on effect of plastic is it destroys the natural beauty of environment.**

**APPENDIX**

**FORMAT OF QUESTIONNAIRE**

**Shri Dharmasthala Manjunatheshwara College (AUTONOMOUS), Ujire-574240.**

**IMPACT OF PLASTIC USAGE ON ENVIRONMENT**

**Gender** Male **Age** 18-24

Female 25-39

40-59

60+

**1. Are you aware of plastic pollution?**

a. Yes

b. No

**2. Number of plastic bags do you/your family use per week**

a.More than 10

b. 7-10

c.4-6

d.1-3

e.0

**3. Extent of plastic pollution in the area where you live in**

a. Large extent

b. Moderate

c. Some extent

d.Not at all

**4. Measure you adopt to avoid plastic**

a. Cloth bags

b. Paper cups

c. Glass bottles/containers

d.Others:Specify:

**5. Do you reuse plastic at home?**

a. Yes

b.No

c.Occassionally

**6. Your priority to control usage of plastic bags**

a. Extra charge for plastic packaging

b. Ditching the plastic all together

c. Switching to reusable

d. Others:Specify:

**7. While shopping I prefer to**

a.get plastic bags provided by supermarket

b. bring my own reusable bag

c. carry the goods by hand

d. Others:Specify:

**8. Your preference of plastic products as**

a. they are cheap

b.they are light in weight

c. they are easily available

d.others:Specify:

**9. Your technique to dispose plastic material**

a.open dumping

b. burying

c. burning

d.others:specify:

**10.Your opinion on effects of plastic which increases**

a.animal death

b.human health problems

c.blockage of sewage problems

d.destroying the natural beauty of environment

**MAJOR FINDINGS**

* By this survey, it is found that 98% of people aware about plastic pollution.
* Majority of people use 1-3 plastic bags per week.
* 58% of people say that there are some extent of plastic pollution in their places.
* Most of the people adapt cloth bags to avoid plastic bags.
* Males reuse plastic at home more than females.
* Both males and females opinion about to control the usage of plastic bags is switching to reusable.
* 81% of people bring their own reusable bag while shopping.
* 53% of people conclude that plastic products are easily available.
* We can conclude that both males and females choose burning method to dispose plastic materials.
* 65% people conclude that excess use of plastic destroys the natural beauty of environment.

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