



**Glimpses of**  
**Student - Study project**  
**Presentation at "District Level"**  
**Under the Jignasa**  
**Organised by C.C.E. Hyderabad**



**Topic:**

**Study of Insects ( Pests & Predators )**  
**that found on " Brinjal Crop Ecosystem "**  
**during Karif Season that cultivating**  
**at Manthani Locality**

**Presented by**

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**Dept. Of Zoology**  
**Govt. Degree College**  
Manthani ,Peddapalli , Telangana state

**B.Suresh Kumar**  
Asst.Pro. Of Zoology  
**Supervisor**

**S. Ramesh**  
**Principal**

## **Dept. Of Zoology**

**Date: 14.12.2017**

To

**The Principal**

**Govt. Degree College ,  
Manthani, Peddapalli**

Sir,

**Sub: - Submission of Report concern to “ Presentation of Student Study Project under Jignasa ” on 13.12.2017 held at G.D.C. Peddapalli -Reg.**

\*\*\*\*\*

With the above cited subject the **Dept. of Zoology** is submitting the detailed report that ,The students of B.Sc. ( B.Z.C. ) prepared a Student study project on

**Study on Insects (Pests &Predators) that found on Brinjal crop Ecosystem during Karif season cultivating at Manthani**

Which was state level competition conducted by C.C.E. Hyderabad under **Jignasa project .**

**The students along with supervisor participated in presentation of project that conducted in I.D. College G.D.C Peddapalli , on 13.12.2017 at 10.00 AM**

Hence I am submitting detailed report for it .

Thanking you sir,

Yours faithfully,

**B.Suresh Kumar**

**Incharge Dept. of Zoology**

**DEPT. OF ZOOLOGY**

## **State level Student study Project Competition**

**District level Selection**

**at : G.D.C. Peddapalli**

**On**

**13.12.2017 at 10.00 AM**

**Topic : Study on Insects (Pests &Predators) that found on Brinjal crop Ecosystem during Karif season cultivating at Manthani**

**Submitted by**

1. **G.Sai kiran, BZC III Year**
2. **G.Keerthana, BZC III Year**
3. **K. Rasaveena, BZC II Year**
4. **A.Sunitha BZC I Year**
5. **B. Sumith Kumar , BZC I Year**

**Under the supervision of**

**B.SURESH KUMAR, Assistant Professor**

**Department of Zoology**

**GOVERNMENT DEGREE COLLEGE, MANTHANI**

**Dist. PEDDAPALLI**

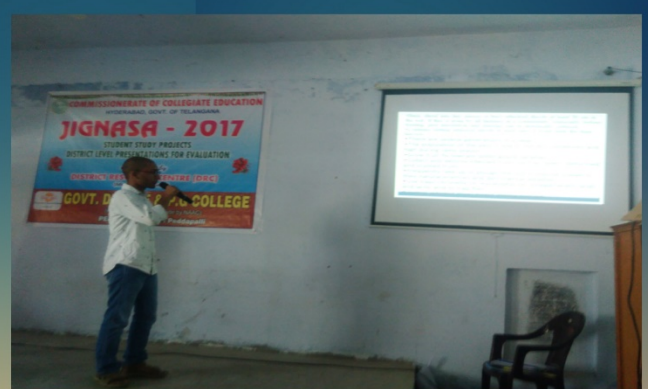




# Glimpses of Student - Study project Presentation at "District Level" Under the Jignasa



## Presentation of Study projects by B.Sc - Students







Commissionerate of Collegiate Education, Hyd, Telangana

**GOVERNMENT DEGREE & P.G. COLLEGE**

PEDDAPALLI, DIST. PEDDAPALLI

(Accredited with 'B' Grade by NAAC)



Government Degree College  
Peddapalli

**JIGNASA-2017**

*Dist. Level Students' Study Project Presentations*

**APPRECIATION CERTIFICATE**

This is to certify that Dr/Mr/Mrs B. Suresh Kumar  
Asst. Professor of Zoology working at GDC Manthani  
who acted as Mentor/Judge on Dt. 13-12-2017 in the subject of Zoology for the  
**JIGNASA-2017** and his/her services are highly appreciable.

**Dist. Co-ordinator**  
JIGNASA-2017, GDC, Peddapalli

**Principal**  
ID-College GDC, Peddapalli

**Title:** Study on Insects (Pests &Predators) that found on Brinjal crop Ecosystem during Karif season cultivating at Manthani



A **STUDENT STUDY PROJECT** submitted to the Commissioner of Collegiate Education, Hyderabad.

Under the **JIGNASA**

Submitted by,

6. G.Sai kiran, BZC III Year
7. G.Keerthana, BZC III Year
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Under the supervision of

**B.SURESH KUMAR**, Assistant Professor

Department of Zoology

GOVERNMENT DEGREE COLLEGE, MANTHANI

Dist. PEDDAPALLI

## **DECLARATION**

We do hereby declare that the work presented in this study project entitled “**Study on Insects (Pests &Predators) that found on Brinjal crop Ecosystem during Karif season cultivating at Manthani**” is an original one and has been carried out by us in the Department of Zoology , Government Degree College, Manthani, Dist. Peddapalli and has not been submitted either in part or in full for the award of any Degree or Diploma of any University earlier.

Date:

G.Sai kiran, BZC III Year

G.Keerthana BZC III Year

K. Rasaveena, BZC II Year

A .Sunitha BZC I Year

B.Sumith kumar , BZC I Year

Place: Manthani



**DEPARTMENT OF Zoology**  
**GOVERNMENT DEGREE COLLEGE, MANTHANI.**  
**DIST: PEDDAPALLI**

**CERTIFICATE**

This is to certify that the **JIGNASA-Students' Study Project** entitled "**Study on Insects (Pests &Predators) that found on Brinjal crop Ecosystem during Karif season cultivating at Ramayya palli village Man:Ramagiri of Manthani division**" in the Department of Zoology, Government Degree College,Manthani, Dist: Peddapalli. It was carried out under my supervision. It is a bonafide work done by them and has not been submitted elsewhere for the award of any Degree or Diploma. This study project is of the standard expected and I strongly recommend that it may be sent for evaluation.

Date:

**(B.Suresh kumar )**

Place:

**Study Project Supervisor**

### ACKNOWLEDGEMENTS

We feel it great honour and proud privilege to extend our heartfelt gratitude to

**Smt. A.Vani Prasad, IAS**,garu, the Commissioner of Collegiate Education,  
Hyderabad, Telangana,

for introducing such a wonderful, research oriented and skill development programme of JIGNASA to Degree College Students across the State of Telangana.

Indeed, this programme develops the academic qualities, inquisitiveness, creative talent and the bent of research in the students.

Thank you very much Madam for giving us an opportunity to undertake study projects under the **JIGNASA-Student Study Projects**.

We owe a great debt of gratitude to **Sri. D.VenkateshGaru**, beloved Principal of this College and the Man of dedication and enthusiasm, for his constant motivation, encouragement for undertaking this study project and constructive suggestions for completion of this project..

We feel immensely happy to extend deep sense of gratitude to our teacher and research supervisor **B.Suresh kumar** , Asst. Professor, Department of Zoo;ogy , Government Degree College, Manthani. Who has guided our research work with meticulous care and scholarly advice.He spared his valuable time and personal care and offered constructive suggestions at every stage of our research work, without which this study project would not have seen the light of the day. We thank one and all who have directly and indirectly encouraged and supported us to carry out this study project.

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## Chapter-I INTRODUCTION



### ABSTRACT :

Brinjal *Solanum melongela* L. is an important vegetable crop of subtropics and tropic with fuel nutritional and ayurvedic medicinal value .

In India it is cultivated in all most all states

Therefore the pest and predator insects that found on brinjal crop Ecosystem and their damage intensity have been studied from Manthani region of Telangana state

A total of 4 species of insect pests namely *Amata passalis*(Tiger moth )

,*Ferrisiavirgata* (Mealybug), *Tricentruscongestus* (Tree hopper ),

*Lucinodes orbonalis* (Fruit borer) were observed

## 1.1 Introduction:

Brinjal *Solanum melongela* L. is an important vegetable crop of subtropics and tropics. Its varieties displays a wide range of fruit shapes and colours ranging from oval or egg shaped to long club-shaped

It is used as fuel in rural areas . The fruit contains low in calories and fats mostly water ,some protein ,fiber and carbohydrates. It is with nutritional and ayurvedic medicinal value . In India Brinjal is cultivated since 4000 years and food production accounted as 8.7 million tons with an area of 0.53 million hectares .

In India it is it is widely cultivated in eight states .The expected yield of crop is not achieved so far because of the crop damage caused by the insect pests . Insect pests are limiting factors for accelaring crop yield ,The Brinjal is attacked by varieties of insect pests such as fruit and stem borers, cell sap suckers ,stem girdlers e.t.c.

Ecological pest control strategy has great importance in ecofriendly control . The present work will add great relevance in integrated pest management of Brinjal insect pests

## 1.2 **Aims and Objectives:**

- 1.To identify the insect pests found on Brinjal crop
- 2.To asses the damage of crop
- 3.Integrated pest Management s





# CHAPTER II

## RESEARCH METHODOLOGY AND FINDINGS & SUGGESTIONS



**Research Methodology:**Involves two steps:-

1. Observation of crop from transplantation onward crop yielding
2. Spotting the insect pests on crops that observed on different parts
3. Identification of insect pests
4. Analysis of crop damage

### **1. Observation of crop since transplantation :-**

The present study was carried out from July to November at **Ramayya palli village Man:Ramagiri of Manthani division** ” of Telangana state during the period from August 2017 to November -2017 ,This area is with average rain fall .Diversity of Insect pests observed within the single field which were associated with the above crop by one man one hour search method .

### **2. Spotting the insect pests on crops:**

I have been noticed that various insect pests & predators attacking the crop at different stages on different parts of plant causing severe damage to the crop which minimizing yield .I collected the noticed insect pests from crop and preserved in formaldehyde solution . Observations were also taken on the abundance of of pests with respect of rain fall temperature and humidity .

### **3. Identification of Insect pests :**

The collected Insect pests were identified by consulting appropriate literature

**4. Analysis of crop damage :**

I have been observed and furnished the data that the Insect pest damaging parts of plants and ultimate effect with that Insect pests on crop yielding

## **Result :**

### **Diversity of Insect Pests :**

In the present study, we noticed total of four insect pests observed on field which furnished in table-1

**Table- 1**

NAME OF THE CROP	NAME OF THE PEST OBSERVED	COMMON NAME	ORDER	FAMILY
BRINJAL	<i>Amata passalis</i>	Tiger moth	Lepidoptera	Arciitidae
	<i>Ferrisia virgata</i>	Mealy bug	Hemiptera	Pseudo coccidae
	<i>Tricentrus congestus</i>	Tree hopper	Hemiptera	Membracidae
	<i>Lucinodes orbonalis</i>	Fruit borer	Lepidoptera	Pyrasutidae

The above mentioned results indicating that among four identified species

*Amata passalis* is defoliator .

*Ferrisia virgata* & *Tricentrus congestus*, are sap suckers .

*Lucinodes orbonalis* is fruit & shoot borers.

The photographs of pest insects which find out on crop mentioned as below



*Amata passalis*



*Ferrisia virgata*



# *Tricentrus congestus*



*Lucinodes orbonalis* (Adult insect )



*Larvae of* - *Lucinodes orbonalis*



*The pest insect Amata passalis* is defoliator it is observed on leaves of plant during early stage to up to flowering stage it continues its life cycle .



*Ferrisia virgata* pest insect is a sp sucker the insect observed on stem which sucking sap .

*Tricentrus congestus*, pest insect also sap suckers that observe d on leaves which ingest sap of leaves .

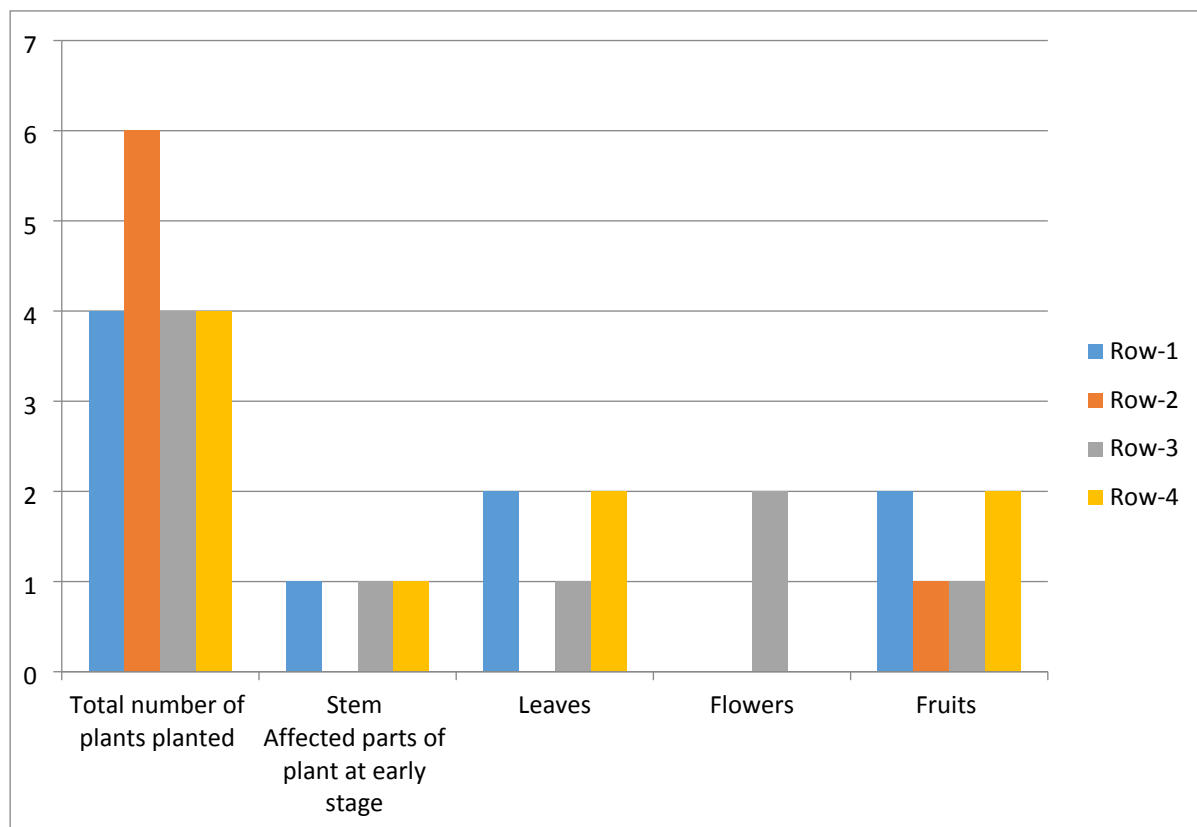
The *Lucinodes orbonalis major* insect pest on brinjal crop .it to be found on crop through out the year and their larval stages causing severe damage to fruits which minimizes yeild.

As a part of eco friendly control of Brinjal pests natural enemies have been allowed to work against pest insect species which reported in the study area. They are predators which feeds on these pest insects that minimizes utilization of pesticides on crops

The intensity of damage by these insects observed from early yielding stage to final state that furnished as table 1 & 2.

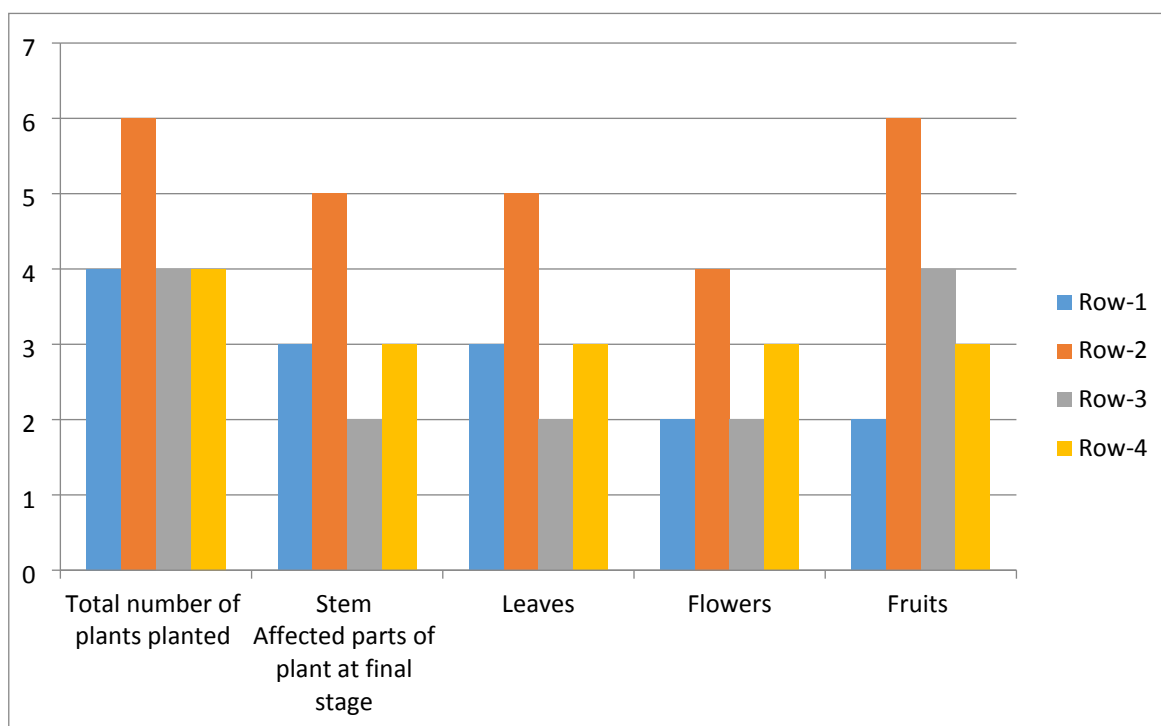
## QUADRATE METHOD

SPOT	ROW	Total number of plants planted	Affected parts of plant at early stage			
			Stem	Leaves	Flowers	Fruits
Spot-1 (4Sq.m.)	Row-1	4	1	2	0	2
	Row-2	6	0	0	0	1
	Row-3	4	1	1	2	1
	Row-4	4	1	2	0	2
	Total	18	3	5	2	6



## Table:2

SPOT	ROW	Total number of plants planted	Affected parts of plant at final stage			
			Stem	Leaves	Flowers	Fruits
Spot-1 (4Sq.m.)	Row-1	4	3	3	2	2
	Row-2	6	5	5	4	6
	Row-3	4	2	2	2	4
	Row-4	4	3	3	3	3
	Total	18	13	13	11	15



## CHAPTER III

# CONCLUSION AND SUGGESTIONS

**Discussion:**



According to Mall et al (1982) *Solanum melangena* was infected by a number of insect pests including *L.orbonalis* during different stages of its growth in most of the tropical countries including India .

The losses caused by these insects vary according to environmental conditions.

These insect pests are more during vegetative phase of the crop up to 3<sup>rd</sup> week of September when the average temperature is 28<sup>0</sup> and humidity is 80% .These conditions are favorable for fruit and shoot borers .

### **Damage symptom**

The infestation starts during early stage of the crop and continues throughout the fruiting stage. Initially the larvae attacks the shoots result in drooping of shoots and dead heart. Later stages, the larvae starts to feed on flower buds and fruits but it prefer more on fruits, the infestation during fruit set causes shedding of buds. Larvae bore the fruits and holes are sealed with excreta and make them unfit for consumption.

### **CONCLUSION AND SUGGESTIONS:**

As a part of eco friendly control of Brinjal pests natural enemies have been allowed to work against pest insect species which reported in the study area. They are predators which feeds on these pest insects that minimizes utilization of pesticides on crops

According to literature about eight species insects are natural enemies to fruit & shoot borer which causing major damage to the crop they are

1.*Trathala flavor bitalis*

2.*Prestomerus testaceus*

3.*Bracon*

4.*Shirakia shoenobi*

5.*Diadegma apastata*

6.*Eriborus*

7.*Trichogramma*

8.*Coccinella* .

### **Management**

- ❖ Early removal of drooping shoots will reduce the fruit infestation.
- ❖ Proper collection of all the infested flower buds, fruits during harvest.
- ❖ Continuous cultivation of brinjal also favours the pest infestation. Hence avoid the crop repetition
- ❖ Grow maize as border crop as the flies have the habit of resting on such tall plants.
- ❖ Maize alone can be sprayed with insecticides.
- ❖ Varieties like Punjab Barsati, (moderate resistant cultivar) Pusa purple round, Punjab Neelam found to be resistant to brinjal fruit borer.
- ❖ Installation of BSFB pheromone traps to monitor and mass trap the male moths.
- ❖ Conserve [natural enemies](#). [Predatory](#) ants are the main [natural enemies](#) of the shoot and fruit borer. Other [natural enemies](#) include: ladybird beetles, praying mantis, earwigs, [predatory](#) bugs and spiders.
- ❖ Destroy old eggplant plants and stubble (burn or bury them) immediately after harvest.
- ❖ Pupae can survive in the stubble for several weeks, infesting the new crop.
- ❖ Use healthy, pest-free seedlings.
- ❖ Raise seedlings far away from sources of infestation (old eggplant fields, eggplant stubble)
- ❖ Grow seedlings under nylon netting to prevent moths from laying eggs on the plants.
- ❖ Remove and destroy infested shoots (readily visible as dry tip of branches).
- ❖ Burn, shred into tiny pieces or bury attacked shoots at least 20 cm in the soil. If this is done by all farmers in a community, especially before fruiting, pest infestation and damage can be drastically reduced.
- ❖ Continue cutting attacked shoots at least once a week until the final harvest.
- ❖ There are several generations in a year.
- ❖ The population of the pest is low in hot dry conditions and high during rainy season.
- ❖ Grow fruit fly tolerant bitter gourd varieties.
- ❖ Collect and destroy infested fruits such as fallen, deformed and stunted fruits.
- ❖ Frequently rake up or plough the soil to expose pupae to their natural enemies and detrimental weather.

- ❖ Use traps citronella oil, eucalyptus oil, vinegar(acetic acid) and lactic acid to trap flies.
- ❖ Destroy infested fruits found during harvest.

# APPENDICES

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## **PHOTOGRAPHY**

### **Brinjal crop during initial state**



### **Brinjal crop due to insect pest damage**





## BRINJAL CROP DAMAGE BY INSECT PESTS DURING CLIMAX STATE







**Title: Study of Algal diversity in Godavari river  
at Manthani**



**A STUDENT STUDY PROJECT submitted to the  
Commissioner of Collegiate Education, Hyderabad.**

**Under the JIGNASA**

**Submitted by,**

- 1. Bandari Nagalaxmi, BZC III Year**
- 2. E. Mallesh, BZC III Year**
- 3. Thotapalli Divya, BZC II Year**
- 4. Manthani Sathish, BZC I Year**
- 5. Kandula Manasa, BZC I Year**

**Under the supervision of**

**MD THAHER HUSSAIN, Assistant Professor**

**Department of Botany**

**GOVERNMENT DEGREE COLLEGE, MANTHANI**

**Dist. PEDDAPALLI**

## **D e c l a r a t i o n**

We do hereby declare that the work presented in this study project entitled “ **A study on Algal biodiversity in Godavari river at Manthani**” is an original one and has been carried out by us in the Department of Botany, Government Degree College, Manthani, Dist. Peddapalli and has not been submitted either in part or in full for the award of any Degree or Diploma of any University earlier.

Date:

Bandari Nagalaxmi, BZC III Year

E. Mallesh, BZC III Year

Thotapalli Divya, BZC II Year

Manthani Sathish, BZC I Year

Place: Manthani

Kandula Manasa, BZC I Year

**DEPARTMENT OF BOTANY**  
**GOVERNMENT DEGREE COLLEGE, MANTHANI.**  
**DIST: PEDDAPALLI**

**CERTIFICATE**

This is to certify that the **JIGNASA-Students' Study Project** entitled “**Algal diversity in Godavari river at Manthani**” is an original one and has been carried out by **Bandari Nagalaxmi, E. Mallesh, Thotapalli Divya, Manthani Sathish and Kandula Manasa** in the Department of Botany, Government Degree College, Manthani, Dist: Peddapalli. It was carried out under my supervision. It is a bonafide work done by them and has not been submitted elsewhere for the award of any Degree or Diploma. This study project is of the standard expected and I strongly recommend that it may be sent for evaluation.

Date:

(Md Thaher Hussain)

Place:

**Study Project Supervisor**

### **ACKNOWLEDGEMENTS**

We feel it great honour and proud privilege to extend our heartfelt gratitude to **Smt. A. Vani Prasad, IAS**, garu, the Commissioner of Collegiate Education, Hyderabad, Telangana, for introducing such a wonderful, research oriented and skill development programme of JIGNASA to Degree College Students across the State of Telangana. Indeed, this programme develops the academic qualities, inquisitiveness, creative talent and the bent of research in the students. Thank you very much Madam for giving us an opportunity to undertake study projects under the **JIGNASA-Student Study Projects**. We owe a great debt of gratitude to **Sri. D.Venkatesh Garu**, beloved Principal of this College and the Man of dedication and enthusiasm, for his constant motivation, encouragement for undertaking this study project and constructive suggestions for completion of this project.. We feel immensely happy to extend deep sense of gratitude to our teacher and research supervisor **Md. Thaher Hussain**, Asst. Professor, Department of Botany, Government Degree College, Manthani. Who has guided our research work with meticulous care and scholarly advice. He spared his valuable time and personal care and offered constructive suggestions at every stage of our research work, without which this study project would not have seen the light of the day. We thank one and all who have directly and indirectly encouraged and supported us to carry out this study project.

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## CHAPTER I: INTRODUCTION



## **1.1 Introduction:**

Water is also known as 'blue gold', essential for life. It covers 3/4<sup>th</sup> of global area. It includes the saline water in the form of Oceans and next comes in the form of molten ice. Rest of the water lies in pure form in rivers, lakes, ponds, and as ground water. Rivers form the lotic form of ecosystem.

Water as a basic supporter of life, it maintains certain physicochemical parameters which in turn have a crucial impact on life being supported. They include turbidity, temperature, solubility, state,  $P^H$ , dissolved minerals and salts. Of them few are chosen by us. Temperature varies from day-to-day. It influences the solubility of water.  $P^H$  is the negative logarithm of Hydrogen ion concentration. The  $P^H$  was measured on the spot using  $P^H$  paper and later tested in the laboratory using  $P^H$  meter. Carbonates ( $CO_3^{2-}$ ) & Bicarbonates ( $HCO_3^-$ ) are estimated by the titrimetric method using Phenolphthalein and Methyl Orange indicators and Hydrochloric acid. Chlorides ( $Cl^-$ ) titrated by titrating water samples with Silver Nitrate and using Potassium Chromate as indicator. Values are presented in mg/L. Calcium ( $Ca^{2+}$ ) is the most abundant ion in fresh water. Magnesium ( $Mg^{2+}$ ) is associated with Calcium, but its concentration remains lower. It is essential for chlorophyll production and acts as a limiting factor for the growth of phytoplankton. Total Hardness refers to a mixture of cations and anions. It is estimated by titrating the water samples against std EDTA (0.01N) using  $NH_4$  buffer solution and Eriochrome black T. Dissolved Oxygen refers to level of free, non-compound Oxygen present in water. Higher value of DO indicates good aquatic life. It is estimated by Winkler's method and results expressed in mg/L. Organic Matter refers to the dissolved organic matter in the water.

Phycology, a part of Botany, is the scientific study of algae. It is also known as Algology. A phycologist is a person who studies phycology. However, just what algae are is difficult to define, because they belong to many different and unrelated taxonomic groups and include both prokaryotic and eukaryotic representations. They are different from higher plants by a lack of normal roots, stems or leaves. Many types have one cell and are very small or microscopic; many others have many cells; some of these are very big, like seaweeds such as kelps. Algae are primary producers in aquatic ecosystems. They are key producers of Oxygen on earth and are the basis of aquatic food webs. Algae have a wide range of commercial applications.

Of algae, green algae belonging to class Chlorophyceae are very closely related to higher plants in their cell features. They are fresh water living. Diatoms belonging to class Bacillariophyceae are jewels of nature; they are very abundant both in fresh as well as in marine waters. Blue green algae belonging to class Cyanophyceae, are prokaryotic and considered as very primitive among all. Few algal forms are symbiotic and used commercially as biofertilizers. Among marine forms kelps belonging to class Phaeophyceae and red algae belonging to class Rhodophyceae are included. However, in our study they are absent.

### **1.2 Aims and Objectives:**

1. To assess the quality of water
2. To identify algal species
3. To study the algal diversity
4. To estimate the physical parameters of water
5. To estimate the chemical parameters of water
6. To describe the algal species found in the water
7. To correlate the quality of water to the algal species found in the water
8. To assess the pollution levels of water with respect to the different parameters calculated

### **1.3 Hypothesis:**

1. The algae present indicates the quality of water
2. The physicochemical parameters influence the growth of algae
3. Few algal species indicate the pollution levels of water if any,
4. Abundance of algae refers to eutrophication

### **1.4 Scope and Limitations:**

Our study is limited to few selected parameters of water and is not used as standard for accurate estimation of water quality. It is the study of Godavari water located in Manthani town only that to the period is June to September. The algae identified are a few of totally present. For the study of all the algae present requires a long period, sophisticated equipments and a thorough study.

### **1.5 Need and Importance of Study:**

In limnological studies, determination of water quality and identification of algae that constitute the primary productivity are very important. Diversity of phytoplankton is an indication of purity. Phytoplanktons are recognized as bio indicators in aquatic environment (Yakub et al., 2000). Phytoplankton is one the most essential characteristics of the aquatic ecosystem for maintaining stability and as means of coping with any environmental change. (Jayaram et al 2003 and Tiwari et al 2004). Certain groups of algae especially Blue green algae can degrade the recreational value of surface waters and in higher densities can cause deoxygenation.

In the present investigation data on morphological features, water quality parameters, density and diversity of phytoplankton communities with special reference to diversity of Algae have been gathered. Based on this data an attempt has been made to assess the quality of water and to evaluate the trophic status of the river.

### **1.6 Scope for future research:**

Algae in fresh waters have numerous environmental functions. Urbanization and other anthropogenic activities have led to the pollution of surface water bodies resulting in extinction of some species on one hand. On the other hand, some species have increased enormously making water unfit for recreation. Ample of work is done either on taxonomic account or limnological account, but studies on the combined aspects is lacking. Information on algal biodiversity and related aspects pertaining to the river is unavailable. There is a need for further investigation by taking into consideration all possible physicochemical parameters. And an extensive work is to be done on identification of all algal species.

### **1.7 Chapterisation:**

The present study entitled “**A Study on Algal biodiversity in Godavari river at Manthani**” is organized into three chapters:

**The first chapter** deals with, Introduction, Need and Importance of the study, and Aims and objectives,.

**The second chapter** deals with Review of Literature, Research methodology and Findings

**The third chapter** includes Conclusion & Suggestions, Scope for future research, References



## **CHAPTER II**

### **REVIEW OF LITERATURE AND PROFILE OF THE STUDY AREA**





## **2.1 Review of Literature:**

In the “Journal of phycology” the paper published with the title ‘Ecological assessment with algae: a review and synthesis’ (Jan Stevenson) the following observation were made: Algae are critical parts of aquatic ecosystems that power food webs and biogeochemical cycling. Algae are also major sources of problems that threaten many ecosystems goods and services when abundances of nuisance and toxic taxa are high. Thus, algae can be used to indicate ecosystem goods and services, which complement how algal indicators are also used to assess levels of contaminants.

The species composition and biomass of algae, as well as many other characteristics of algal assemblages, are evaluated in assessments of aquatic ecosystems to determine threats to drinking water, fisheries, and recreational uses of water resources (Stevenson et al. 2010). Relating harmful algal blooms in coastal waters to nutrient loads, using paleo limnology to document climate change in arctic waters, and quantifying changes in lake diatom species composition to human disturbance (Anderson et al. 2002, Smol and Douglas 2007, Stevenson et al. 2013) represent assessments of algae in aquatic ecosystems.

Thus, characterizations of algal species composition, biomass, metabolism, and chemical by-products provide assessments of the problems caused by algae, ecosystem services supported by algae, and other changes in aquatic resource conditions that are difficult to measure without algal proxies. Contemporary ecological assessments with algae can be defined broadly as the application of algal biology to understand relationships among human and natural determinants of algae and ecosystem services. Thus, assessments determine the causes and consequences of growth, accumulation, and death of nuisance and toxic species of marine and freshwater algae for safe use and productivity of drinking water and fisheries (Hallegraeff 1993, Falconer 1999). A paper published by Dr L Srinivas who has done his research on algal diversity in Lower Manair Dam, Karimnagar, it is mentioned that diatoms of Bacillariophyceae dominates other group of algae. More so, the species richness also varies with environmental fluctuations and seasonal variations. Temperature is a physical factor that in turn influences the solubility altering the levels of various organic and inorganic components. The present study restricts its observation to the months of June to September only laying a way for further elaborative work in this regard.

The utilization of river water for irrigation and drinking purposes has assumed importance now a days. The disposal of agricultural wastes and untreated sewage into water bodies adversely affect the plant and animal life. Sukumaran (2002) of the opinion that the constant discharge of sewage into aquatic system enriches the organic content leading to the

eutrophication and deterioration of water quality. The water quality of freshwater environment is assessed by the physicochemical and biological parameters.

## **2.2 Profile of Study area:**

Manthani, ancient place of highly educated people of vedic culture. It is called as Manthrapuri in vedic time and river Godavari blessed this town with her presence,. 300 families of this town live in USA. Manthani is a Town in Manthani Mandal in Peddapalli District of Telangana State, India.. It is located 31 km towards East from District head quarters Peddapalli. It is a Mandal head quarter. Manthani Pin code is 505184 and postal head office is Manthani and its telephone code is 08729. Manthani is surrounded by Mutharam (Manthani) Mandal towards South , Kamanpur Mandal towards west , Malhar Rao Mandal towards East , Jaipur Mandal towards North . Ramagundam , Mancherial , Mandamarri , Bellampalle are the nearby Cities to Manthani.Telugu is the Local Language here. Total population of Manthani is 17049 .Males are 8705 and Females are 8,344 living in 4059 Houses. Total area of Manthani is 2297 hectares.There is no railway station near to Manthani in less than 10 km. . Ramgundam Rail Way Station , Peddapalli Rail Way Station, and Peddempet Rail Way Station are the railway stations near to Manthani. You can reach from Ramagundam, Peddapalli to Manthani by road after . However Warangal Rail Way Station is major railway station 84 KM near to Manthani

The Godavari River is 1465km long and ranks as the second longest river after the Ganga. It is also known as Dakshina Ganga. It rises at Brahmagiri Mountain, near Triambak in Nasik district of Maharashtra. It has its catchment area in seven states: Maharashtra, Telangana, Chhattisgarh, Madhya Pradesh, Andhra Pradesh, Karnataka and Odisha. The total area of 3,12,812 sq.km with a maximum length and width of about 995 km and 583 km. It pours into the Bay of Bengal via two mouths at Antarvedi of East Godavari district, Andhra Pradesh. Major tributaries of the river are Manjira, Indravati, Sabari, Bindusara rivers.

The number of dams constructed in Godavari basin is the highest among all the river basins in India. Nearly 350 major and medium dams and barrages had been constructed in the river basin by the 2012. The delta of Godavari River is home to the Coringa mangrove forests, a portion of which acknowledged as Coringa Wildlife Sanctuary. It is famous for its reptiles, crustaceans and fishes.

The river moves into Telangana at Kandhakurthi in Nizambad district. The river enters into Manthani constituency at sundilla of Kamanpur mandal and exits at Thatigudem of Mahadevpur mandal. While in Mandal mandal it enters at Siripuram and exits at Arendla. During its course in Manthani mandal it passes through the villages Kasipet, Uppatla, Potharam, Vilocharam, Manthani HQ, Knanapur, Kansaipet and Ammagaripally. Sri Gowthameeshwara Temple and Hanuman temple are the two temples located at river bank at Manthani Head Quarters.

Kaleshwaram is a village in Mahadevpur mandal in Bhoopalpaly district. It is at the juncture of the rivers Godavari and its Pranahita tributary. The place is popularly known as second Kashi or southern Indian Kashi. Kaleshwaram Lift Irrigation Project, a costliest irrigation project took up by the state government with an estimated cost of Rs, 80,500 crores. It is 68km away from Manthani. The project is designed to irrigate 7,38,851 hectares uplands. Kaleshwaram is a major pilgrim centre for Hindus as it houses Mukteshwara swamy (Lord Shiva) temple.



## CHAPTER III

### RESEARCH METHODOLOGY AND FINDINGS & SUGGESTIONS



### **3.1 Research Methodology:**

Our project made use of Selective sampling. It involves two steps: -

1. Collection of water samples and their analysis
2. Sampling of algae

#### **3.1.1 Collection of water samples and their analysis:-**

1 litre of surface water samples was collected from three different sites of the river in the months of June, July, August and September.

The samples were analyzed on the same day in the laboratory for different physicochemical parameters following the standard methods. (APHA, 2005)

The following factors had been estimated:-

Temperature,  $P^H$ ,  $CO_3^-$  &  $HCO_3^-$ ,  $Cl^-$ ,  $Ca^{2+}$ ,  $Mg^{2+}$ , Total Hardness, Dissolved Oxygen, and Organic Matter .

#### **3.1.2 Sampling of algae:**

For phytoplankton study, one litre of surface water samples from three different locations was collected and kept in sedimentation column after adding 2-3 ml of 4% Formaldehyde solution. After sedimentation, the samples were concentrated to 100 ml. Finally the concentrated material was observed under microscope and diagrams were drawn. The identification of algal species is done with the help of standard keys using monographs and relevant literature available. (Prescott)

The results of physicochemical parameters are analyzed and the characteristic features of algae identified are collected. Depending on this data the nature of water and the threat to human being if at all found will be summarized.

### **3.2 Findings and Analysis:**

#### **3.2.1 Algal diversity:**

In the present study, the members of Diatoms (Bacillariophyceae) occupied first position. It is followed by Chlorophyceae and Cyanophyceae.

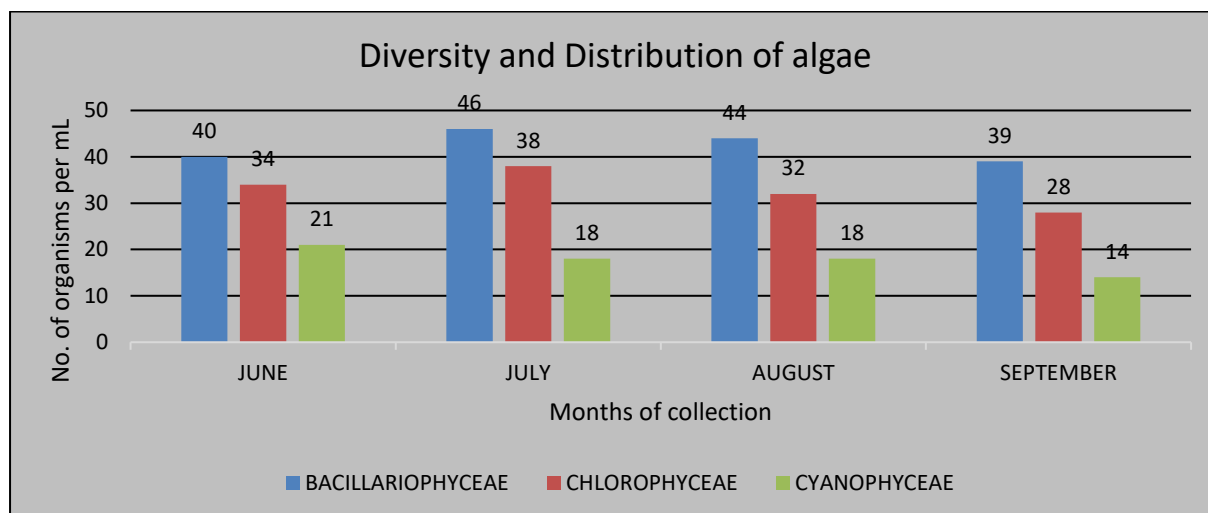
The diatoms found are Melosira, Synedra, Pinnularia, Navicula, Cymbella, Nitzschia, and Gomphonema.

Chlorophyceae members include Spirogyra, Oedogonium, Pediatrum, Scenedesmus, Oocystis, Cosmarium and Closterium

The Cyanophyceae members include Oscillatoria, Lyngbya, Anabena, Nostoc, Aulosira, Merismopedia, and Chroococcus



The relative abundance of algal species observed in all the four months can be represented in the following chart



3.2 Chart showing relative abundance of Algae

### 3.2.2 Laboratory work

The results of two out of four months average values of physicochemical parameters were incorporated in tables.

#### AUGUST

#### SEPTEMBER

S.No	PARAMETERS	Station I	Station II	Station III	Station I	Station II	Station III
1	Temperature	24	26	25	22	20	21
2	pH	8	7.5	8	7	7	8
3	CO <sub>3</sub> <sup>-</sup>	15	20	21	32	33	35
4	HCO <sub>3</sub> <sup>-</sup>	160	174	178	170	180	179
5	Cl <sup>-</sup>	120	125	126	148	150	146
6	Ca <sup>2+</sup>	44	45	48	48	51	52
7	Mg <sup>2+</sup>	2.5	2.8	2.7	2.7	2.8	2.4
8	Total Hardness	80	77	79	92	95	100
9	Dissolved O <sub>2</sub>	4	4.2	3.4	4.8	4.5	5
10	Organic Matter	1.1	1.2	1.2	0.8	0.8	0.9

3.2 Table showing average physicochemical parameters for two months

They can be summarized as follows:-

1. Temperature ranged from 22°C - 25 °C
2. P<sup>H</sup> ranged from 8.0 to 8.4
3. CO<sub>3</sub><sup>-</sup> ranged from 15 – 35mg/L
4. HCO<sub>3</sub><sup>-</sup> ranged from 160 – 180 mg/L
5. Cl<sup>-</sup> ranged from 120 -150 mg/L
6. Ca<sup>2+</sup> ranged from 44 – 52 mg/L
7. Mg<sup>2+</sup> ranged from 2.6 – 2.8 mg/L
8. Total Hardness ranged from 70 – 100 mg/L
9. Dissolved Oxygen ranged from 3.4 – 5.0 mg/L
10. Organic Matter ranged from 0.8 – 1.2 mg/L



## CHAPTER IV

### CONCLUSION AND SUGGESTIONS



#### **4.1 Conclusion:**

The present investigation is focused on the water quality and diversity of algae. In the present study three groups of algae viz., Bacillariophyceae, Chlorophyceae and Cyanophyceae were identified. In the river Bacillariophyceae was dominant among all other classes having maximum diversity followed by Chlorophyceae and Cyanophyceae. The river water is extensively used for irrigation and drinking purposes.

Based on the physicochemical and phycological findings, the river was categorized as Oligotrophic. On the basis of both physicochemical and phycological characteristics, it can be concluded that the water is fresh and unpolluted but not totally safe for human consumption. Moreover, it is suggested that the anthropogenic activities and human interference should be reduced to much more extent. The present study reveals the importance of physicochemical parameters and their effect on algal biodiversity in the River. However 'preserving algal diversity' is the significant output of present study.

#### **4.2 Suggestions:**

- Ample of work is done either on taxonomic account or limnological account, but studies on the combined aspects is lacking.
- Information on algal biodiversity and related aspects pertaining to the river is unavailable. There is a need for further investigation by taking into consideration all possible physicochemical parameters.
- An extensive work is to be done on identification of all algal species.

# APPENDICES

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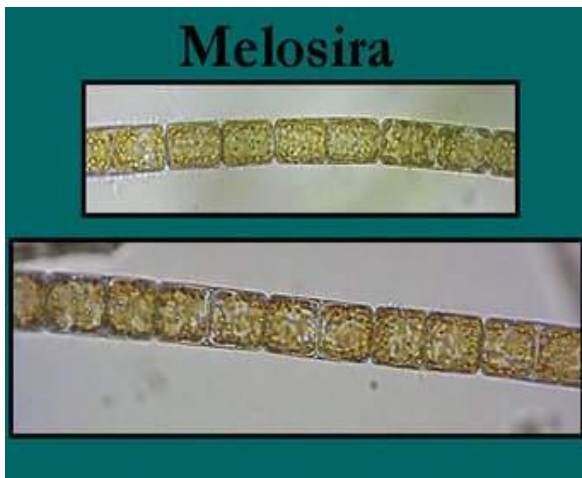
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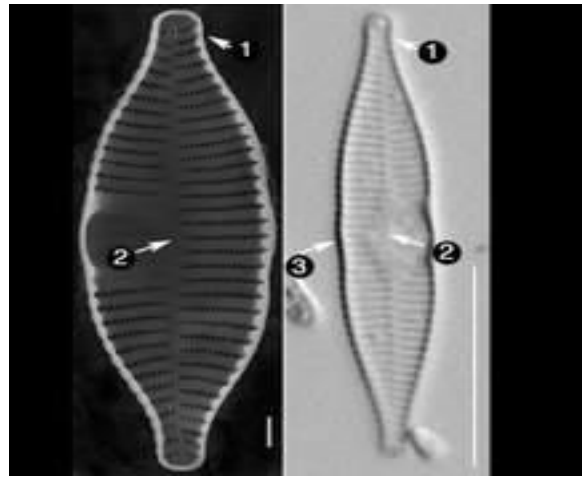
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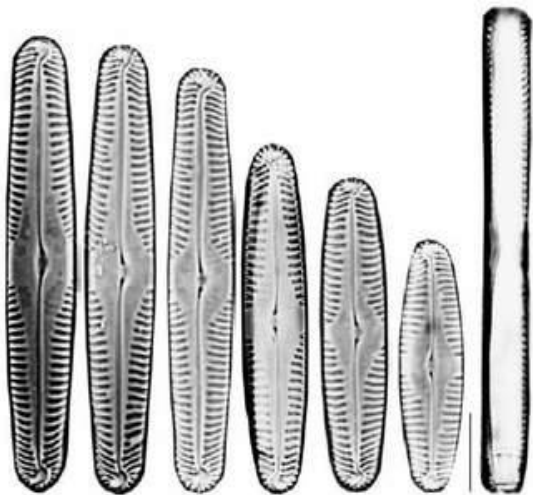
Melosira



Synedra



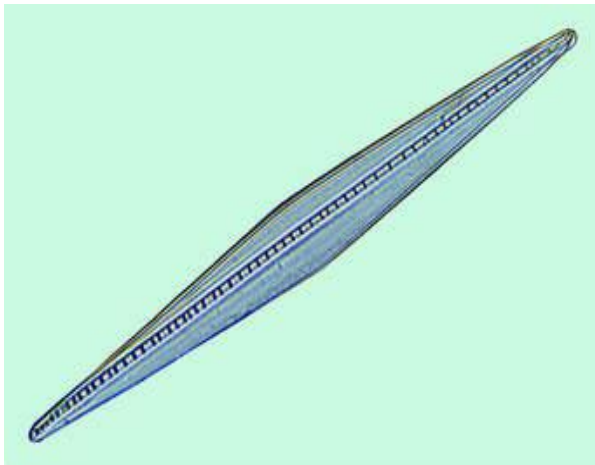
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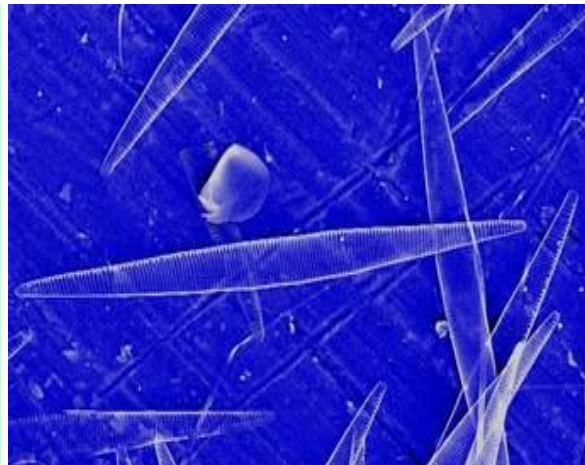
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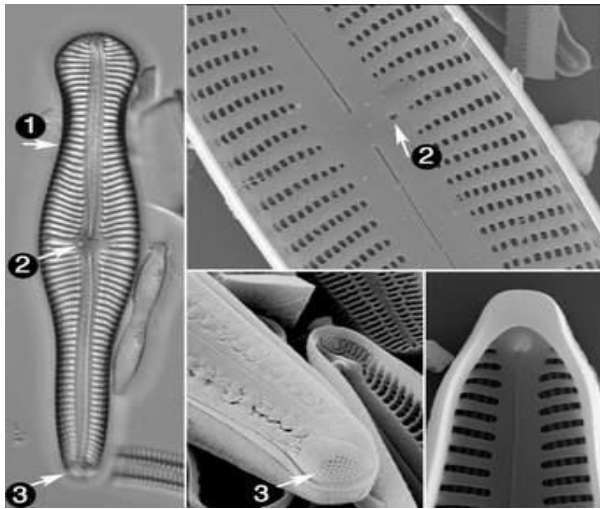
Navicula



Nitzschia



Gamphonema



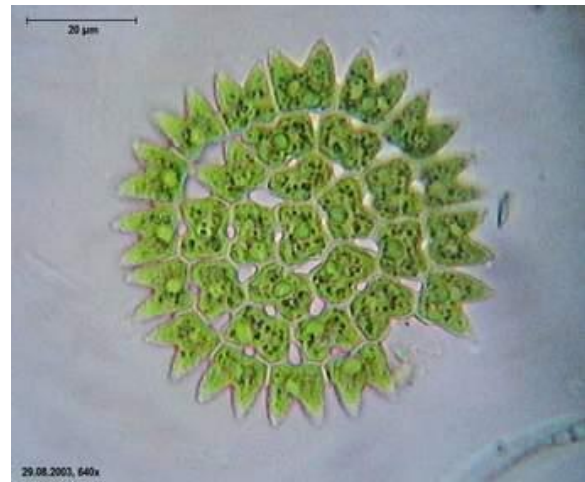
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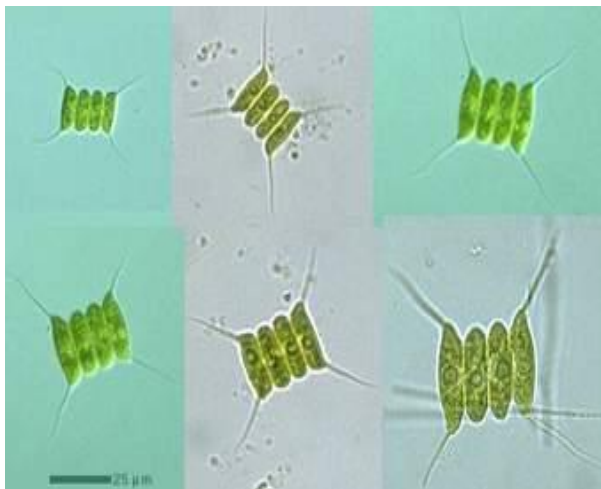
Oedogonium



Pediastrum



Scenedesmus

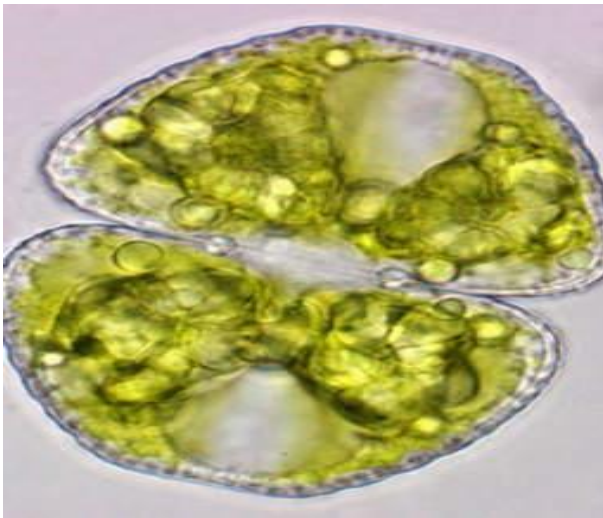


Oocystis

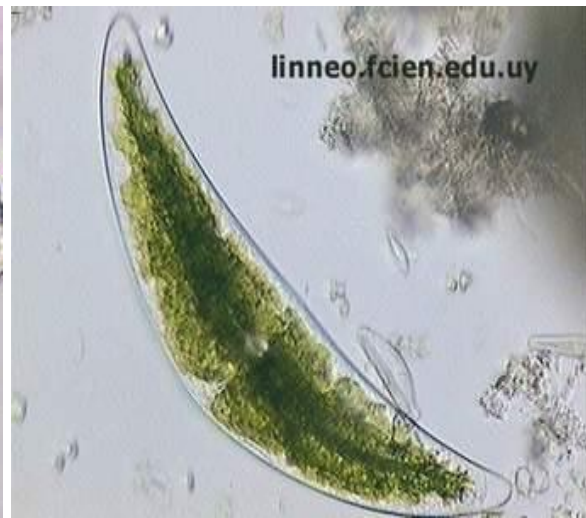




Cosmarium



Closterium



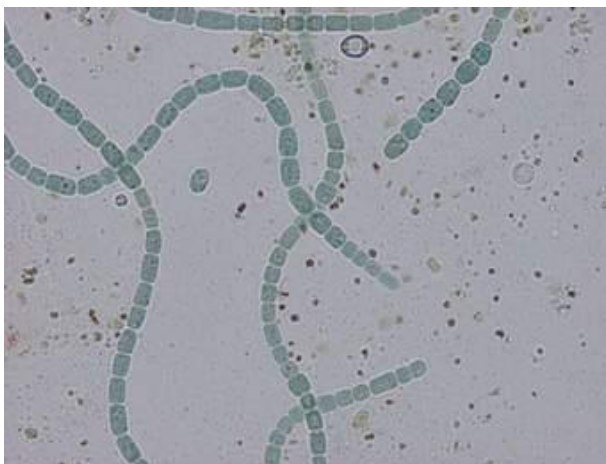
Oscillatoria



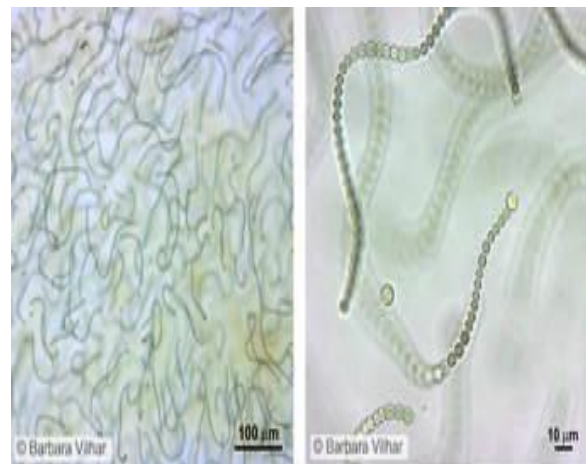
lyngbya



Anabena



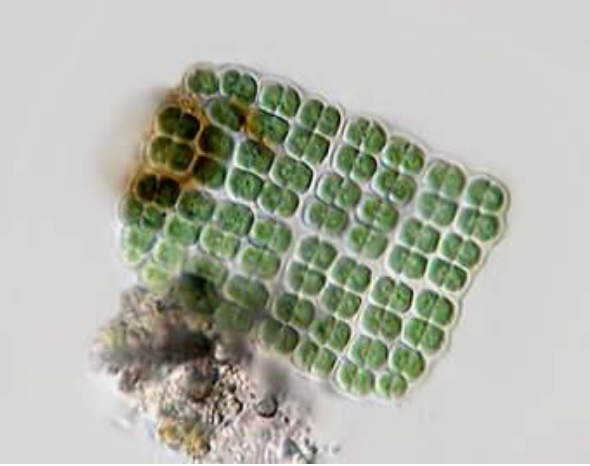
Nostoc



Aulosira



Merismopedia



Chroococcus







**TITLE: STUDY OF SATISFACTION OF THE CUSTOMERS  
ABOUT THE SERVICES PROVIDED BY THE LIFE  
INSURERS IN MANTHANI**



**A STUDENT STUDY PROJECT submitted to the  
Commissioner of Collegiate Education, Hyderabad.  
Under JIGNASA**

**Submitted by,**

- 1. G. Srikanth BCOM III Year**
- 2. V. Kumara Swamy III Year**
- 3. V. Rakesh B Com III Year**
- 4. A. kumara Swamy B Com III Year**
- 5. K. Sammaiah B Com III Year**

**Under the supervision of**

**S. RAMESH, Assistant Professor**

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**GOVERNMENT DEGREE COLLEGE, MANTHANI**

**Dist. PEDDAPALLI**

### **Declaration**

We do hereby declare that the work presented in this study project entitled “ **A study on Algal biodiversity in Godavari river at Manthani**” is an original one and has been carried out by us in the Department of Commerce, Government Degree College, Manthani, Dist. Peddapalli and has not been submitted either in part or in full for the award of any Degree or Diploma of any University earlier.

Date:

Place:

1. **G. Srikanth BCOM III Year**
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**DEPARTMENT OF COMMERCE  
GOVERNMENT DEGREE COLLEGE, MANTHANI.  
DIST: PEDDAPALLI**

**CERTIFICATE**

This is to certify that the **JIGNASA-Students' Study Project** is an original one and has been carried out by the students of Department of Commerce, Government Degree College, Manthani, Dist: Peddapalli. It was carried out under my supervision. It is a bonafide work done by them and has not been submitted elsewhere for the award of any Degree or Diploma. This study project is of the standard expected and I strongly recommend that it may be sent for evaluation.

Date:

Place:

**S. RAMESH  
Study Project Supervisor**

### **ACKNOWLEDGEMENTS**

We feel it great honour and proud privilege to extend our heartfelt gratitude to **Smt. A.Vani Prasad, IAS**,garu, the Commissioner of Collegiate Education, Hyderabad, Telangana, for introducing such a wonderful, research oriented and skill development programme of JIGNASA to Degree College Students across the State of Telangana. Indeed, this programme develops the academic qualities, inquisitiveness, creative talent and the bent of research in the students. Thank you very much Madam for giving us an opportunity to undertake study projects under the **JIGNASA-Student Study Projects**. We owe a great debt of gratitude to **Sri. D.Venkatesh**, beloved Principal of this College and the man of dedication and enthusiasm, for his constant motivation, encouragement for undertaking this study project and constructive suggestions for completion of this project.. We feel immensely happy to extend deep sense of gratitude to our teacher and research supervisor **S. Ramesh**, Asst. Professor, Department of Commerce, Government Degree College, Manthani. who has guided our research work with meticulous care and scholarly advice. He spared his valuable time and personal care and offered constructive suggestions at every stage of our research work, without which this study project would not have seen the light of the day. We thank one and all who have directly and indirectly encouraged and supported us to carry out this study project.

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# **SATISFACTION OF THE CUSTOMERS ABOUT THE SERVICES PROVIDED BY THE LIFE INSURERS IN MANTHANI**

## **ABSTRACT**

*In the modern society, based on the several factors customers are trying to estimate their satisfaction with their service providers where considering various needs and requirements of the customers, service providers are also always in various ways trying to provide better quality of services to the customers to fulfill their satisfaction and the life insurers are no exception to this. In the present context, a study on the customer satisfaction in respect of the Indian life insurance sector with special reference to MANTHANI customers. To perform the analyses, here, accepted 100 usable customers' responses were considered as the sample size .*

## **KEYWORDS**

*Customer Satisfaction, Life Insurance.*

-=-=-=-=-

## **INTRODUCTION**

Satisfaction of the customers comes only when their needs and wants are fulfilled. Rust and Oliver(1994) explained the customer satisfaction as “a summary of cognitive and affective reaction to a service incident (or sometimes to a long-term service relationship). Satisfaction (or dissatisfaction) results from experiencing a service quality encounter and comparing that encounter with what was expected”. Customer satisfaction has now emerged as the most important objective of the firm through which they will be able to retain their own customers as well as will be able to attract the new customers in the global competitive market and for this purpose, like any other company, almost every life insurance company tries to provide quality of services and products to their customers in order to satisfy them. After the entrance of private and foreign insurance companies in Indian life insurance market, the customers' perception of quality of services from the insurance companies has already been changed. Realizing the present

situation, life insurance companies are now trying to concentrate their focus on the customer satisfaction. To understand this in the better way, considering all aspects, an extensive study has been conducted at here on the satisfaction of the life insurance customers about the services provided by all the life insurance companies operating their business in Manthani.

## **REVIEW OF LITERATURE**

Cardozo (1965) for the first time proposed the concept of customer satisfaction but in the past few decades including Olshavsky and Miller (1972) and Anderson's (1973) studies, lots of research works as well as developments of theory had taken place in the area of customer satisfaction. Conceptually, satisfaction is not only the customer attitude about a service provider (Levesque and McDougall, 1996) but also the reflection of positive feelings of a customer about a service (Cronin et al., 2000). Boulding et al. (1993) stated that from a specific transaction or from an accumulative view, satisfaction may also be understood. Kotler (2000); Hoyer and MacInnis (2001) and Hansemark and Albinsson (2004) revealed that satisfaction is an indication of customers' overall attitude or behavior about the service provider or the emotional reaction about the difference between customers' expectation and perception, regarding the achievement of various need, want or goal. Dwyer et al. (1987); Ganesan (1994) and other researchers stated that customer's satisfaction is an important indicator of successful relationship management as well as a future-oriented indicator of the profits of the company (Fornell, 1992) where according to Anderson et al.'s (1994) opinion, the more fundamental indicator of past, current and future performance of the firm is cumulative satisfaction. Wirtz and Bateson (1999) stated that customer satisfaction is the evaluative response of the customer to the services rendered by the provider. Bitner and Hubbert (1994) indicated that at the specific encounter level or at the overall satisfaction level the customer satisfaction may be examined. Products and services are both included in customer satisfaction which are away from consideration of zero defects and fitness for purpose (Talor, 1995 and Reis et al., 2003).

## **METHODOLOGY**

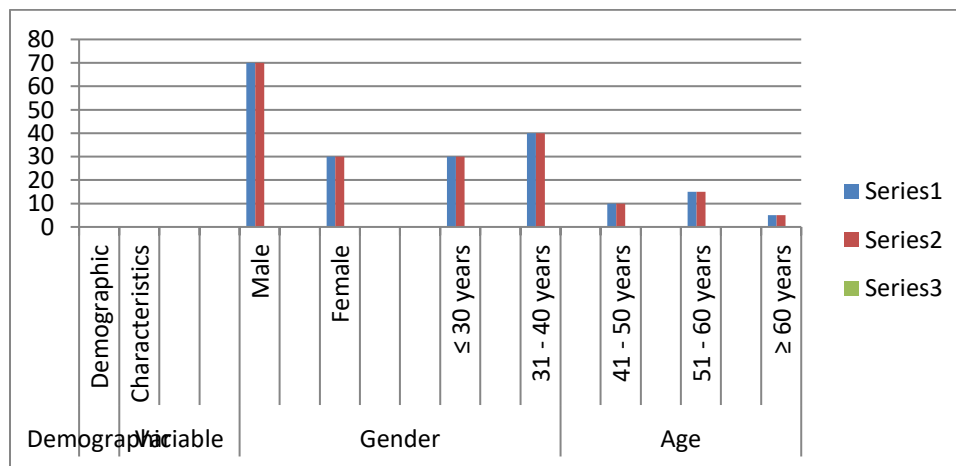
In order to conduct the study on the satisfaction of the customers about the services provided by all the life insurance companies in Manthani, the initial questionnaire was developed as a survey instrument. To collect the necessary data, along with the other items, the fulfilment of customers' various needs with the insurer, performance of the insurer according to client's ideal service, customers' satisfaction with creativity of the insurers, customers' satisfaction with effectiveness of the insurers' work and overall satisfaction of the customers with the insurers were included in the survey instrument. After proper formation of the survey instrument study was conducted where researcher randomly selected 100 customers. Based on this study, the preliminary analysis established the internal consistency of the items within questionnaire and gave the confirmation of validity and reliability of final survey instrument. The structure of the questionnaire is both open-ended and close-ended and consisted 7 point Likert scale ranging from 1-strongly disagree to 7-strongly agree as well as 1-not at all satisfied to 7-completely satisfied. After successful completion of the pilot study, considering different demographic profile of the respondents and using random sampling technique, total 100 questionnaires were distributed among the customers where 100 customers were agreed to give response and finally obtained 80 usable responses which was considered as the sample size for this study.

## **RESULTS AND DISCUSSIONS**

In order to obtain the data for the purpose of the present study, a cross-sectional survey was conducted in Manthani among the customers of all the life insurance companies operating their business where researcher carefully considered the different demographic profile such as gender, age, income status, occupation, educational qualification, locality of living and modern aids accessed by the customers. The summarized demographic profile of the customers of the study is now given below:

**Table 1: Demographic profile of the customers**

Demographic Variable	Demographic Characteristics	Frequency	Percentage (%)
Gender	Male	70	70
	Female	30	30
Age	≤ 30 years	30	30
	31 - 40 years	40	40
	41 - 50 years	10	10
	51 - 60 years	15	15
	≥ 60 years	5	5

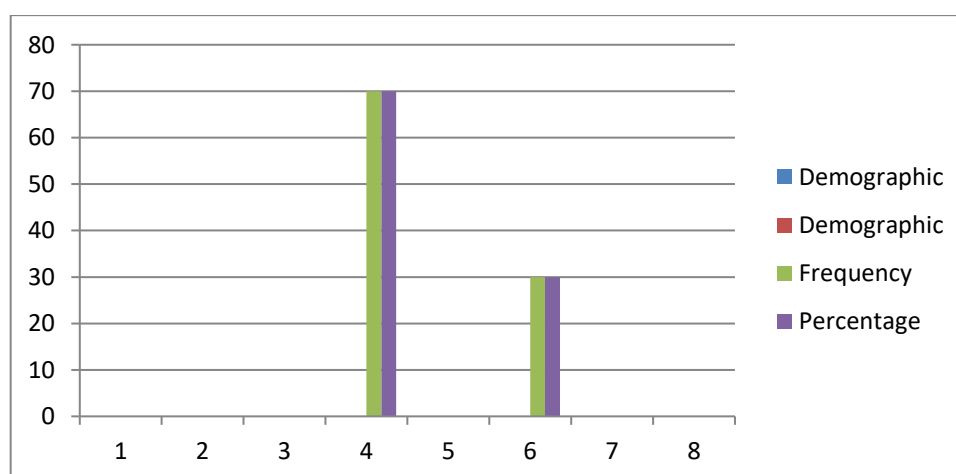


From the available data, the satisfaction of the life insurance customers was assessed in respect of the fulfilment of customers' various needs with the insurer, performance of the insurer according to client's ideal service, customers' satisfaction with creativity of their insurers, customers' satisfaction with effectiveness of their insurers' work and overall satisfaction of the customers with their insurers.

First of all, the result of the fulfillment of various needs of the customers with their insurers is presented at Table 2.

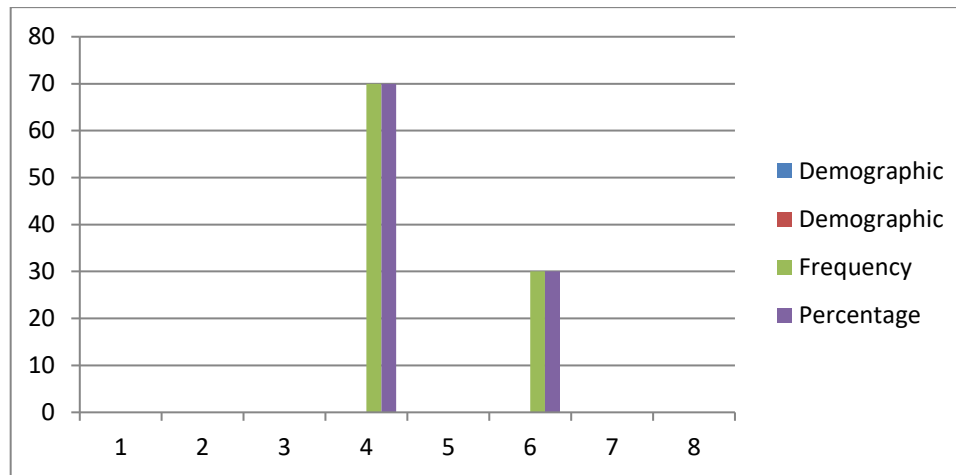
**Table 2: Analysis of fulfilment of customers' various needs with the insurer**

VARIABLE	CHARACTERISTICS	FREQUENCY	PERCENTAGE
Fulfillment of customers needs with the insurer	Strongly disagree	10	10
	disagree	20	20
	Disagree somewhat	5	5
	undecided	10	10
	Agree somewhat	30	30
	Agree	5	5
	Strongly agree	20	20



**Table 3: Analysis of performance of the insurer according to client's ideal service**

VARIABLE	CHARACTERISTICS	FREQUENCY	PERCENTAGE
Performance	Strongly disagree	5	5
	disagree	10	10
	Disagree somewhat	15	15
	undecided	10	10
	Agree somewhat	15	15
	Agree	5	5
	Strongly agree	40	40

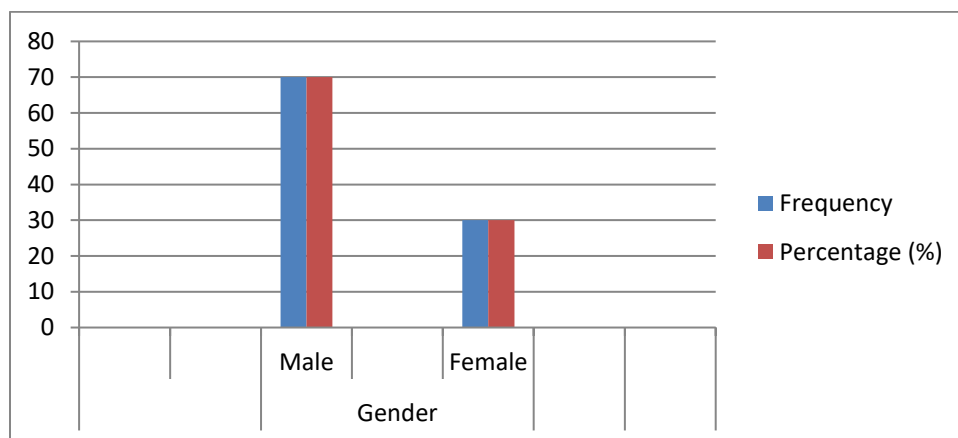


Now, the result of the satisfaction of the life insurance customers with creativity of the insurers is presented at Table 4.

**Table 4: Analysis of Satisfaction with the creativity of the insurer**

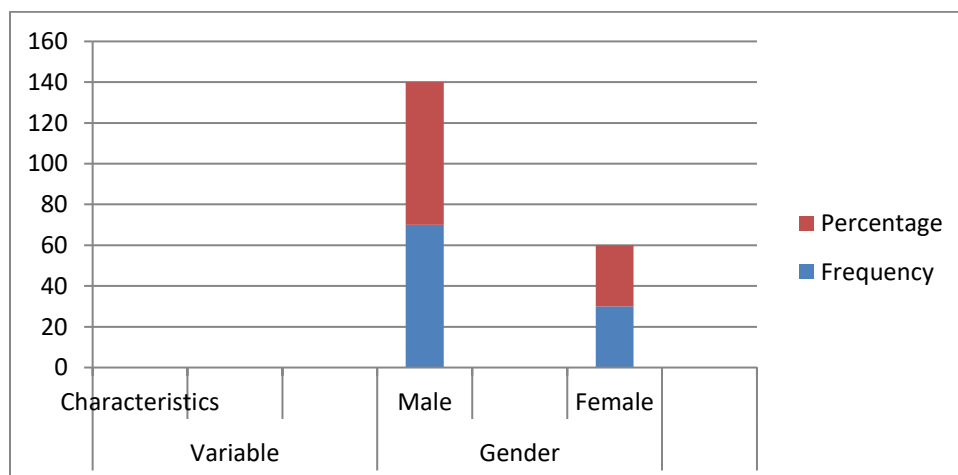
VARIABLE	CHARACTERISTICS	FREQUENCY	PERCENTAGE
Satisfaction with the creativity of the insurer	Strongly disagree	2	2
	disagree	10	10
	Disagree somewhat	5	5
	undecided	3	3
	Agree somewhat	4	4
	Agree	40	40
	Strongly agree	34	34





The result of customers' satisfaction with effectiveness of the insurer is presented in Table 5:

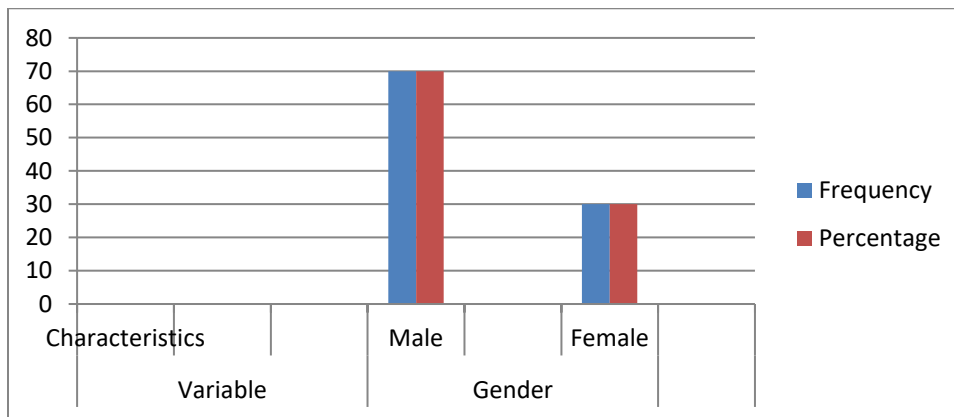
VARIABLE	CHARACTERISTICS	FREQUENCY	PERCENTAGE
Satisfaction with the efficiency of the insurer	Strongly disagree	1	1
	disagree	3	3
	Disagree somewhat	5	5
	undecided	8	8
	Agree somewhat	5	5
	Agree	40	40
	Strongly agree	38	38



Customers' overall satisfaction with the insurer is presented in Table 6:

**Table 6: Analysis of customers' overall satisfaction with the insurer**

VARIABLE	CHARACTERISTICS	FREQUENCY	PERCENTAGE
Customers' overall Satisfaction with the insurer	Strongly disagree	1	1
	disagree	2	2
	Disagree somewhat	5	5
	undecided	4	4
	Agree somewhat	3	3
	Agree	30	30
	Strongly agree	55	55



## CONCLUSIONS

In the study of the satisfaction of the customers about the services provided by the life insurers in Manthani, we tried to examine the satisfaction of the life insurance customers in respect of the fulfilment of customers' various needs with the insurer, performance of the insurer according to client's ideal service, customers' satisfaction with creativity of their insurers, customers' satisfaction with effectiveness of their insurers' work and overall satisfaction of the customers with their insurers. Study established that except the case of the creativity of the insurers, majority of the customers were almost satisfied in other cases by their insurers. Thus, current study indicates that though customers have overall satisfaction with their insurers but considering various needs and requirements of these customers, along with other areas insurers have to improve their creativity in various aspects as well as have to involve dedicatedly in the development of new strategies for the purpose of the customer

satisfaction through which they will be able to achieve maximum growth in the present competitive life insurance market and will survive in the future.

#### **LIMITATIONS:**

- Monetary resources are limited
- Time available is limited
- Work is limited to Manthani only
- Sample size is too small to be generalized.

#### **SUGGESTIONS FOR FURTHER RESEARCH:**

- Sample may be increased
- It may be carried across several places.

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**TITLE: HAPPINESS INDEX- A STUDY IN MANTHANI TOWN**



**STUDENTS' STUDY PROJECT SUBMITTED TO THE COMMISSIONER OF  
COLLEGIATE EDUCATION, HYD**

*Under the*

**JIGNASA**

*Submitted by*

**B.A II YEAR STUDENTS**

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**Dist: PEDDAPALLI**

## **DECLARATION**

We do hereby declare that the work presented in this study project entitled **“Happiness Index- A study in Manthani Town** is an original one and has been carried out by us in the Department of Economics Government Degree College, Manthani, Dist: Peddapalli and has not been submitted either in part or in full for the award of any Degree or Diploma of any University earlier.

Date:

**B.A II YEAR STUDENTS**

Place: Manthani

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**DIST: PEDDAPALLI**

**CERTIFICATE**

This is to certify that the **JIGNASA-Students' Study Project** entitled "**Happiness Index- A study in Manthani Town**" is an original one and has been carried out by **M.Shirisha, B.Sharada, K.Prashanth, J.Amulya, B.Prakash, M. Santhosh** (B.A II Year students) in the Department of Economics Government Degree College, Manthani, Dist: Peddapalli under my supervision. It is a bonafide work done by them and has not been submitted elsewhere for the award of any Degree or Diploma. This study project is of the standard expected and I strongly recommend that it may be sent for evaluation.

Date:

**(Dr.P.MalathiLatha)**

Place:

**Study Project Supervisor**



## ACKNOWLEDGEMENTS

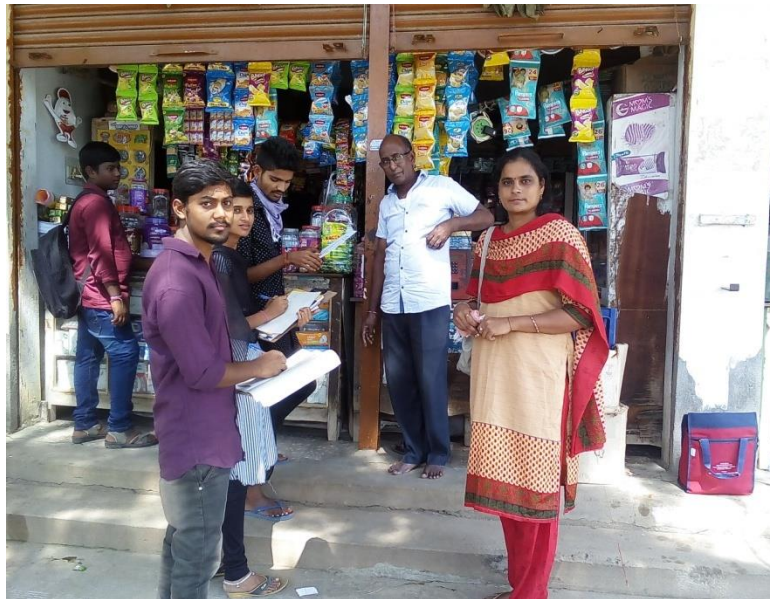
We feel it great honour and proud privilege to extend our heartfelt gratitude to **Smt. A.Vani Prasad, IAS**,garu, the Commissioner of Collegiate Education, Hyderabad, Telangana, for introducing such a wonderful, research oriented and skill development programme of JIGNASA to Degree College Students across the State of Telangana. Indeed, this programme develops the academic qualities, inquisitiveness, creative talent and the bent of research in the students. Thank you very much Madam for giving us an opportunity to undertake study projects under the **JIGNASA-Student Study Projects**. We owe a great debt of gratitude to **Sri.D.venkateshGaru**, beloved Principal of this College and the Man of dedication and enthusiasm, for his constant motivation, encouragement for undertaking this study project and constructive suggestions for completion of this project. We feel immensely happy to extend deep sense of gratitude to our teacher and research supervisor **Dr.P.Malathilatha**, Asst. Professor, Department of Economics, Government Degree College, Manthani. Who has guided our research work with meticulous care and scholarly advice. She spared her valuable time, and personal care and offered constructive suggestions at every stage of our research work, without which this study project would not have seen the light of the day. We thank one and all who have directly and indirectly encouraged and supported us to carry out this study project.

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## CHAPTER –I: INTRODUCTION:



## CHAPTER -I

### 1.1: Introduction:

Every human being or society are doing their job or work in searching of happiness and contentment. How much money we earned how much fame we gained all are leads to happiness or wellbeing of human beings. Happiness is a positive emotion of human being. In the aspect of economic view there are lot of measurements to assess the development of economy like GDP,HDI, NI, PCI,.. etc. but surveys proved that the economies or countries which are having more GDP or more HDI are not having that much of ranking in Happiness Index. It shows that Happiness does not based on only the economic factors but also some other factors influencing these happiness. Our present study reveals that other factors which impacts the happiness of human beings as well as economy in micro level.

**1.2: Definition of Happiness:** Most of us probably don't believe, that we need a formal definition of happiness we know it when we feel it, and we often use the term to describe a range of positive emotions, including joy, pride, contentment, and gratitude. But to understand the causes and effects of happiness, researchers first need to define it. Many of them use the term interchangeably with "subjective well-being," which they measure by simply asking people to report how satisfied they feel with their own lives and how much positive and negative emotion they are experiencing. The research suggests that happiness is a combination of how satisfied you are with your life (for example, finding meaning in your work) and how good you feel on a day-to-day basis. Both of these are relatively stable that is, our life changes, and our mood fluctuates, but our general happiness is more genetically determined than anything else. The good news is, with consistent effort, this can be offset. Think of it like you think about weight: if you eat how you want to and are as active as you want to be, your body will settle at a certain weight. But if you eat less than you'd like or exercise more, your weight will adjust accordingly. If that new diet or exercise regimen becomes part of your everyday life, then you'll stay at this new weight. If you go back to eating and exercising the way you used to, your weight will return to where it started. So it goes, too, with happiness. In other words, you have the ability to control how you feel and with consistent practice, you can form life-long habits for a more satisfying and fulfilling life.

Happiness is an objective feeling which has no definition. It's something that brings a smile, spreads positivity and comes naturally to a person. We may not be able to measure happiness,

but can surely access which city is the happiest in terms of Pursuit, Purpose, Pleasure, Passion and Context.' The Gross National Happiness (GNH) is an aggregate measure of a country's national production, in the vein of the gross national product or gross domestic product. Gross National Happiness (GNH) attempts to measure the sum total not only of economic output, but also of net environmental impacts, the spiritual and cultural growth of citizens, mental and physical health and the strength of the corporate and political systems

**1.3:Happiness Index- World:** The GNH Index was developed by the Centre for Bhutan Studies (CBS) to help measure the progress of Bhutanese society. In 2010, the first nationwide GNH survey was conducted with a sample size of 8,510 Bhutanese aged 15 and above. The second nationwide survey was conducted in 2015 and had a sample size of 8,871. After all three rounds of surveys, follow-up interviews and additional data gathering was conducted in order to review and refine the survey.

Gross National Happiness is a developing philosophy as well as an "index" which is used to measure the collective happiness in any specific nation. The concept was first mentioned in the Constitution of Bhutan, which was enacted on 18 July, 2008. However, the term itself, 'Gross National Happiness', was previously coined in 1979 during an interview at Bombay airport when the then king of Bhutan, Jigme Singyewangchuck, said "We do not believe in Gross National Product. Gross National Happiness is more important. The term "gross national happiness" was coined by the fourth king of Bhutan, Jigme Singye Wangchuck, in the 1970s. The GNH's central tenets are: "sustainable and equitable socio-economic development; environmental conservation; preservation and promotion of culture; and good governance". GNH is distinguishable by for example valuing collective happiness as the goal of governance, and by emphasizing harmony with nature and traditional values. Two Canadians, Michael and Martha Pennock, played a major role in developing the Bhutanese GNH survey. They developed a shorter international version of the survey which has been used in their home region of Victoria BC as well as in Brazil. The Pennocks also collaborated with Karma Ura in the production of a policy lens which is used by the Bhutanese GNH Commission for anticipating the impact of policy initiatives upon the levels of GNH in Bhutan. GNH was later articulated as nine domains, which provides a further level of conceptual analysis for policy making. These are: psychological well-being, health, time use, education, cultural diversity and resilience, good governance, community vitality, ecological diversity and resilience, and living standards.

The first World Happiness Report was published in April 2012, in support of the High Level Meeting at the United Nations on happiness and well-being, chaired by the Prime Minister of Bhutan. Since then we have come a long way. Increasingly, happiness is considered to be the proper measure of social progress and the goal of public policy. This is the fourth World Happiness Report, and it is different in several respects from its predecessors. These differences relate to timing, content and geography. In April 2015, we were already in the throes of planning for the World Happiness Report 2017, on the assumption that we would have, and need, somewhere between 18 months and two years to undertake the depth and range of research we wanted to cover. However we were invited to prepare a shorter report in 2016—the World Happiness Report 2016 Update—that would be released in Rome in March 2016, close to World Happiness Day (March 20th). Twelve months after that we plan to release World Happiness Report 2017, with the usual broad range of chapters based on global research, this time including separate chapters focused on two large global sub-populations, in China and Africa respectively. Further plans include deeper analysis of workplace happiness, and the happiness implications of immigration, refugees, and transient populations.

Norway moved from No. 4 to the top spot in the report's rankings, which combine economic, health and polling data compiled by economists that are averaged over three years from 2014 to 2016. Norway edged past previous champ Denmark, which fell to second. Iceland, Switzerland and Finland round out the top 5. Studying happiness may seem frivolous, but serious academics have long been calling for more testing about people's emotional well-being, especially in the United States. In 2013, the National Academy of Sciences issued a report recommending that federal statistics and surveys, which normally deal with income, spending, health and housing, include a few extra questions on happiness because it would lead to better policy that affects people's lives. The entire top ten were wealthier developed nations. Yet money is not the only ingredient in the recipe for happiness, the report said. In fact, among the wealthier countries the differences in happiness levels had a lot to do with "differences in mental health, physical health and personal relationships: the biggest single source of misery is mental illness," the report said. "Income differences matter more in poorer countries, but even their mental illness is a major source of misery," it added. Another major country, China, has made major economic strides in recent years. But its people are not happier than 25 years ago, it found. The United States meanwhile slipped to the number 14 spot due to less social support and greater corruption; those very factors play into why Nordic



countries fare better on this scale of smiles. “What works in the Nordic countries is a sense of community and understanding in the common good,” said Meik Wiking, chief executive officer of the Happiness Research Institute in Copenhagen, who wasn’t part of the global scientific study that came out with the rankings. The rankings are based on gross domestic product per person, healthy life expectancy with four factors from global surveys. In those surveys, people give scores from 1 to 10 on how much social support they feel they have if something goes wrong, their freedom to make their own life choices, their sense of how corrupt their society is and how generous they are.

**1.4: Happiness Index- India:** India Ranks 118 out of 156 Countries India ranked 118th out of 156 countries on the United Nations World Happiness Index (WHI) 2016. • It was revealed by the fourth World Happiness Report 2016 and published by the Sustainable Development Solutions Network (SDSN), a global initiative for the UN. • In 2015 India was at 117 th in the happiness list. • According to the report 2016, Denmark takes the top spot as the happiest country in the world. It has replaced Switzerland.

Happiness is a mental or emotional state of well-being defined by positive or pleasant emotions ranging from contentment to intense joy. Happy mental states may also reflect judgements by a person about their overall wellbeing. The World Happiness Report is a measure of happiness published by the United Nations Sustainable Development Solutions Network. In July 2011, the UN General Assembly passed a resolution inviting member countries to measure the happiness of their people and to use this to help guide their public policies. The United Nations declared 20th March as the International Day of Happiness to recognize the relevance of happiness and well-being as universal goals. ‘Happiness’ has been making headlines over the past few months, though India didn’t have much to cheer about, as it figured among 10 countries that saw the largest declines in happiness levels between 2005–07 and 2013–15. According to the World Happiness Report which ranked 156 countries, India was at the 118th spot-one below last year’s ranking. But this must have hurt the powers that even Saudi Arabia, Somalia and Pakistan were rated happiest than India Every year, the World Happiness Index surveys numerous people from various countries around the world in search of, as the name implies, which country has the happiest population. This year’s winner is Denmark, followed closely by Switzerland, Iceland, and Norway. The US ranked 13th .

India's rank in the World Happiness Report 2017 is a reminder that high growth rate does not determine happiness. India has obtained low scores on all the variables which highlights that there is a lack of social cohesion among citizens of India. A poor score on healthy life expectancy suggests that India is not able to provide equal health care facilities to all its citizens. In fact, most rural areas of India do not have proper hospitals and trained doctors. The high rates of mental health indicate that most individuals do not have anyone to count on during times of crisis. India also has performed inadequately with regard to freedom of life choices. Due to lack of employment opportunities, individuals are forced to take up jobs that are available. In particular often children in rural areas have to drop out from school to earn money for their household. Additionally even with respect to life partners inter caste and inter religion marriages continue to be a taboo in Indian society. Hence clearly there are restrictions on the major life decisions that individuals undertake in India. A low score in generosity highlights the high rates of inequality and unequal distribution of wealth, which further indicates that the rich are not sacrificing their self interests for the poor. A poor performance in all the indicators demonstrates that the Government of India has failed to satisfy the well being of individuals. Hence, the citizens of India have such low levels of trust in the political system of the country. Merely achieving growth rate is not sufficient, unless concerns such as inequality and unemployment are resolved. The Government of India should realize that the huge gap between the rich and the poor is the main cause of misery in the country. To achieve a better rank in the next World Happiness Report, the Government of India should frame policies which will reduce inequality, provide equal rights to women and improve mental healthcare facilities. Finally with the rising rates of unemployment, the Government of India should particularly create more jobs for the Indian youth to increase the satisfaction levels.

It reflects a "new worldwide demand for more attention to happiness as a criterion for government policy". Previous reports have argued that happiness provides a better indicator of human welfare than do income, poverty, education, health and good government measured separately but now they also point out that the inequality of well-being provides a broader measure of inequality. "People are happier living in societies where there is less inequality of happiness. They also find that happiness inequality has increased significantly (comparing 2012-2015 to 2005-2011) in most countries, in almost all global regions, and for the

population of the world as a whole,” the report said. India ranked 122nd, behind terror-riven Pakistan and poorest-of-poor Nepal in the global list of the happiest countries, according to a global report released on Monday. India ranked at 122 out of 155 countries in the World Happiness Report 2017, four notches below its previous rank of 118. The report was released on Monday at the United Nations at an event celebrating International Day of Happiness.

India was behind the majority of South Asian Association for Regional Cooperation (Saarc) nations, apart from war-ravaged Afghanistan, that stood at 141. Among the eight Saarc nations, Pakistan was at 80th position, Nepal stood at 99, Bhutan at 97, Bangladesh at 110 while Sri Lanka was at 120. However, Maldives did not figure in the World Happiness Report.

**Table, 1.1:** At A Glance On Worldwide Happiest Countries And Saddest Countries With Score:

RANK	HAPPIEST COUNTRIES	RANK	SADDEST COUNTRIES
1	Norway (7.54)	146	Yemen (3.59)
2	Denmark (7.42)	147	South Sudan (3.59)
3	Iceland (7.5)	148	Liberia (3.53)
4	Switzerland (7.49)	149	Guinea (3.51)
5	Finland (7.47)	150	Togo (3.49)
6	Netherlands (7.38)	151	Rwanda (3.47)
7	Canada (7.32)	152	Syria (3.46)
8	New Zealand (7.321)	153	Tanzania (3.35)
9	Australia (7.28)	154	Burundi (2.91)
10	Sweden (7.28)	155	Central African Republic (2.69)

**1.5: Happiness Index- Indian states:** Madhya Pradesh has become the first Indian state to set up ‘Happiness Department’. The new department will work to ensure happiness in the lives of common people on the lines of Bhutan. It will map and define parameters of happiness and efficiency and would chalk out directives/guidelines for coordination between departments in the direction of spreading happiness in the state. The Chief Minister Shivraj Singh Chouhan will head the department. Bhutan is the only country in the world that measures its progress through the Gross Happiness Index (GHI). Madhya Pradesh will be the

first state in the country to float a happiness index in 2018. The index, based on a questionnaire will help the government gauge the happiness quotient of people.

Last year, the state government had announced that the happiness index will be ready by 2017, but on Monday, chief minister Shivraj Singh Chouhan made a fresh announcement on his Twitter handle, saying, “I take this opportunity on the international day of happiness to share that a Happiness Index is being prepared to be published in 2018. I am glad that feedback from happiness index survey will be factored into our government policies and public expenditure priorities”.

Chouhan’s main tweet was, “Matter of immense pride for me that MP is the first state in India to set up a Happiness Dept. Rest of the details of his vision for the happiness department were shared on the photograph which was posted along with the tweet. “It gives me delight to see my government train volunteers for improving the happiness quotient of people of Madhya Pradesh...Borrowing from religious texts and folk wisdom, we are trying to spread virtues of goodness, altruism, forgiveness and peace...we will try to infuse a positive mind-set among people through lessons, yoga, moral science , meditation etc,” Chouhan said on his twitter handle. Manohar Dubey, chief executive officer of RajyaAnandSansthan (state happiness department) told that form was being prepared. “We are in the process of consulting some institutions and experts for framing the comprehensive happiness index, which will be a first such exercise by any state in India,” he said. Shivraj Singh Chouhan announced creation of the happiness department during a state executive meet of the BJP in Bhopal on April 1, 2016.

United Andhra Pradesh is the second state in the country after Madhya Pradesh to start a Happiness Index Department. Chief Minister N Chandrababu Naidu divested his hold over the energy, industries, commerce and tourism portfolios to head the newly formed department, There is a need of to start Happiness department in out Telangana state too. Our government implementing number of public welfare schemes and policies for prosperity and wellbeing. If happiness department started in our state then we can assess the how much policies and schemes influencing the happiness of the people.

## **1.6: Determinants of happiness:**

1. Economic factors
2. Social factors
3. Personal factors
4. Geographical factors

**1.7:Need And Importance of The Study:**The economics of happiness or happiness economics is the quantitative and theoretical study of happiness, positive and negative affect, well-being, quality of life, life satisfaction and related concepts, typically combining economics with other fields such as psychology, health and sociology. It typically treats such happiness-related measures, rather than wealth, income or profit, as something to be maximized. The field has grown substantially since the late 20th century, for example by the development of methods, surveys and indices to measure happiness and related concepts. Its findings have been described as a challenge to the economics profession.

Happiness is not feeling good all the time however, recent research suggests that an even-keeled mood is more psychologically healthy than a mood in which you achieve great heights of happiness regularly—after all, what goes up must come down. Furthermore, when you ask people what makes their lives worth living, they rarely say anything about their mood. They are more likely to cite things that they find meaningful, such as their work or relationships. Recent research even suggests that if you focus too much on trying to feel good all the time, you'll actually undermine your ability to feel good at all—in other words, no amount of feeling good will be satisfying to you, since what you expect (all the time) isn't physically possible for most people.

**Happiness is Not: Being Rich or Affording Everything You Want**

While living below the poverty line certainly makes it hard to be happy, beyond that, money does not appear to buy happiness. Imagine you unexpectedly get a \$10,000/year raise. While you would certainly be excited in the short term, it would only be a matter of time before your expectations change to fit your new budget. Before you know it, you're just as happy as you were before the raise! This holds true for new houses, new cars, new gadgets, and all of the other material goods that people spend so much time pining for.

**Happiness is Not A Final Destination**

The old adage, "Are we there yet?" is often applied to discussions of happiness, as if a person works towards happiness and one day "arrives." Contrary to popular belief, however, unless you are one of the few who won the genetic lottery and are naturally happy, it takes regular effort to maintain happiness. Most established techniques for becoming

happier—keeping a gratitude journal, for example—are habits, not one-shot events, and most life events that make us happy in the short-term, like getting married or being promoted, fade over time as we adapt to them. In reality, work—like all other aspects of life—is likely to make us feel a wide range of emotions. If your job feels depressing and meaningless, it might be because it is depressing and meaningless. Pretending otherwise can just make it worse. Happiness, of course, is a great thing to experience, but nothing that can be willed into existence. And maybe the less we seek to actively pursue happiness through our jobs: the more likely we will be to actually experience a sense of joy in them a joy which is spontaneous and pleasurable, and not constructed and oppressive. But most importantly, we will be better equipped to cope with work in a sober manner. To see it for what it is. And not as we—whether executives, employees, or dancing motivational seminar leaders—pretend that it is. So stay happy stay healthy...

### **1.8: Aims and Objectives:**

- To assess the happiness index among the people as well as in economy.
- To find wellbeing and happiness among the people.
- To analyse how the social factors impacts the happiness.
- To analyse how the economic factors impact the happiness.
- To find that whether the high income leads to more happiness or not.
- To analyse how the family and friends impact the happiness of an individual.
- To analyse the how the nature and climate impact the Happiness of an individual as well as society.
- To find that how the happiness of people leads to economic and social development.

### **1.9: Hypothesis:**

1. Happiness and will being of an individual are based on economics factors like income, occupation, resources.
2. Happiness and will being of an individual are based on social factors like caste, family marital status and other social factors
3. Happiness and will being of an individual are based on personal factors like name, age, spouse and children.
4. Happiness and will being of an individual are based on geographical factors like climate, aesthetic environment etc...



5. Happiness and well being of an individual or economy more likely impact by other factors than economic factors.

**1.10: Research Methodology:** The data base for the study comprises of data collected from primary and secondary sources. The primary data will be collected by administering the structured questionnaire. The data will be collected by canvassing this structured schedule among 250 respondents. The secondary data are obtained from the published books government reports and articles in India, and WHR reports, and other daily paper news, So far as possible we use all the data for our study. The samples collected from random sampling we have followed the method of gall up poll method.

The present study is an **analytical** as well as **descriptive** type of research in nature. It is based on both Primary and Secondary data.

**1.11: Sampling Design:** The present study is based on the survey method random Sampling Technique has been adopted to select the sample respondents. The size of the sample is 250 common people. The primary data has been collected from a sample of 250 common people by administering a structured and pre-tested questionnaire.. The total sample consists of 150 Men and 100 Women.

**1.12: Data Collection:** The present study is based on both primary and secondary data.

The **primary data** for the study has been collected from a sample of 250 common people which includes 150 Men and 100 Women by administering a structured and pre-tested questionnaire.

The **secondary data** has been collected from the various sources such as Reports of UNDP, RBI Annual Reports, Government surveys, Articles published in Journals and Magazines, Online Data base and News Papers etc.

**Statistical Tools:** The primary data so collected has been processed and analyzed by adopting various statistical tools like percentages, and averages.

**Period of the Study:** The survey was carried out in Mnathaniof Peddapallidistrict during 15<sup>th</sup> October, 2017 and 25<sup>th</sup> October, 2017 to collect the responses from a sample of 250 common people.

### **1.13: Scope and Limitations of the Study**

The present study is not free from limitations as any other study. The study is limited to only Manthani town. It may be or may not be common either to Telangana area and other regions. The Happiness is World Wide human emotion. We have taken a small area to study up to what extent this happiness index or human emotion of happiness is influenced by so many factors. And how these factors are making, loss or profit to the economy and to the human beings. Therefore, it may not be generalized for entire area. Happiness is a positive emotion and it increases energy levels of a human being and made them to work whole heartedly. It may lead to development or profit to the state and nation's exchequer. A small study like ours may give some scope to understand the factors impact the happiness of an individual and society and it may reflect at the larger level also.

### **1.14: Chapterisation:**

The present study entitled “**Happiness Index- A study in Manthani Town**” is organized into four chapters:

**The first**, chapter deals with introduction, Aims and objectives, hypothesis, Research methodology, Scope and limitations of the study, chapterization. It also covers the Need and Importance of the study.

**The second**, chapter deals with Review of Literature and profiles of the study area

**The third** this chapter mainly deals with further analysis, results and discussions obtained through primary data from the respondents in the study area.

**Fourth chapter** deals with the summary and final conclusions, and suggestions



## **CHAPTER –II**

### **REVIEW OF LITERATURE AND PROFILES OF THE STUDY AREA**



## Chapter –II

### Review of Literature and profiles of the study area

**2.1 Review of Literature:** In first chapter on introduction, we have discussed about what is happiness and factors influencing happiness and the Happiness index. The present chapter discusses the review of literature on happiness and happiness index. The study on happiness, and happiness index has been conducted by many authors in India and abroad by discussing about the importance of happiness and how people are to be influenced by many factors, has been discussed.

AshuthoshMitra's book "Happiness All Is We Want" reveals that, Today, we are leading our lives in mindless pursuit, unable even to articulate what we are pursuing. We are unhappy even after achieving what we desire. Happiness is all we want! Suggests that the source of peace and happiness is within us, if we know the secret.the book's objective is to help us unlock that secret and attain a high level of overall well-being in order to lead a happy and fulfilling life and be the healthiest we can be, mentally and physically. Demystifying the spiritual aspect of wellbeing, this book integrates it with your life objectives. You can immensely improve not only the peace and happiness in your life but your beauty and appearance as well.

Other book, "The How of Happiness: A New Approach to Getting the Life You Want by Sonja Lyubomirsky, uses a scientific approach to guide readers into a life of happiness. It discusses the various elements of happiness in a practical and empowering way that is easy for readers to follow. This book addresses strategies for finding happiness, new methods of thinking, and quizzes for readers to take to help them realize their potential for happiness, and how to sustain it. Lyubomirsky uses this book to give suggestions to help acquire and maintain happiness quickly and without spending a lot of money.

Flourish: A Visionary New Understanding of Happiness and Well-being by Martin E. P. Seligman Written by psychologist Martin E. P. Seligman, this book focuses on raising the bar for happiness. It addresses feelings of optimism, motivation, and the character that is needed to get the most out of life. This book addresses how happiness alone is not able to give meaning to one's life. In order to flourish, people also need to be able to cultivate their talents, build deep and lasting relationships, feel pleasure, and make meaningful contributions

to the world. The author describes happiness as being only one of the five parts of flourishing in life, along with engagement, relationships, meaning, and accomplishment.

The world happiness report 2015 mentioned that ,The world has come a long way since the first World Happiness Report in 2012. Happiness is increasingly considered a proper measure of social progress and a goal of public policy.

The year 2015 is a watershed for humanity, with the pending adoption of Sustainable Development Goals (SDGs) to help guide the world community towards a more inclusive and sustainable pattern of global development. The SDGs will include goals, targets and quantitative indicators. The Sustainable Development Solutions Network, in its recommendations on the selection of SDG indicators, has strongly recommended the inclusion of indicators of subjective well-being and positive mood affect to help guide and measure the progress towards the SDGs. Many governments and experts offer considerable support for the inclusion of happiness indicators in the SDGs

According to world happiness report 2017, The first *World Happiness Report* was published in April, 2012, in support of the UN High Level Meeting on happiness and well-being. Since then we have come a long way. Happiness is increasingly considered the proper measure of social progress and the goal of public policy. In February 2017, the United Arab Emirates held a full-day World Happiness meeting, as part of the World Government Summit. Now International Day of Happiness, March 20th, provides a focal point for events spreading the influence of global happiness research. The launch of this report at the United Nations on International Day of Happiness is to be preceded by a World Happiness Summit in Miami, and followed by a three-day meeting on happiness research and policy at Erasmus University in Rotterdam. Interest, data, and research continue to build in a mutually supporting way. This report gives special attention to the social foundations of happiness for individuals and nations.

The chapter starts with global and regional charts showing the distribution of answers, from roughly 3000 respondents in each of more than 150 countries, to a question asking them to evaluate their current lives on a ladder where 0 represents the worst possible life and 10 the best possible. Although the top ten countries remain the same as last year, there has been some shuffling of places. Most notably, Norway has jumped into first position, followed

closely by Denmark, Iceland and Switzerland. These four countries are clustered so tightly that the differences among them are not statistically significant, even with samples averaging 3,000 underlying the averages. Three-quarters of the differences among countries, and also among regions, are accounted for by differences in six key variables, each of which digs into a different aspect of life. These six factors are GDP per capita, healthy years of life expectancy, social support (as measured by having someone to count on in times of trouble), trust (as measured by a perceived absence of corruption in government and business), perceived freedom to make life decisions, and generosity (as measured by recent donations). The top ten countries rank highly on all six of these factors.

International differences in positive and negative emotions (affect) are much less fully explained by these six factors. When affect measures are used as additional elements in the explanation of life evaluations, only positive emotions contribute significantly, appearing to provide an important channel for the effects of both perceived freedom and social support.

Most countries in the world project that life circumstances will improve in future

The World Happiness Report was written by a group of independent experts acting in their personal capacities. Any views expressed in this report do not necessarily reflect the views of any organization, agency or programme of the United Nations

**2.2 Profile of Manthani:** Manthani, an ancient place of highly educated place of vedic culture. It is called as Manthrapuri in vedic time. And river Godavari blessed this town with her presence. 300 families of this town live in USA. Manthani is a Town in Manthani Mandal in Peddapalli District of Telangana State, India. It is located 31 KM towards East from District head quarters Peddapalli. It is a Mandal head quarter. Manthani Pin code is 505184 and postal head office is Manthani and its telephone code is 08729. Manthani is surrounded by Mutharam (Manthani) Mandal towards South, Kamanpur Mandal towards west, Malhar Rao Mandal towards East, Jaipur Mandal towards North. Ramagundam, Mancherla, Mandamarri, Bellampalle are the nearby Cities to Manthani. Telugu is the Local Language here. Total population of Manthani is 17049. Males are 8705 and Females are 8,344 living in 4059 Houses. Total area of Manthani is 2297 hectares. There is no railway station near to Manthani in less than 10 km. Ramgundam Rail Way Station, Peddapalli Rail Way Station, and Peddempet Rail Way Station are the railway stations near to Manthani. You can reach from Ramagundam, Peddapalli to Manthani by road after. However Warangal Rail Way Station is major railway station 84 KM near to Manthani.



### **CHAPTER –III**

## **ANALYSIS, RESULTS AND DISCUSSIONS OBTAINED THROUGH PRIMARY DATA**





## Chapter –III

### Analysis, Results and Discussions obtained through Primary Data

The primary data of our study is tabulated and presented below in the paragraph that follows.

We took the determinants of happiness in four categories, those are,

1. **Personal factors:** Name, Age, Health, Education, Physical Exercise, Hobbies and Contentment.
2. **Social factors:** Caste, residence, Family type, Marital Status, Children.
3. **Economic factors:** Income, Employment, food security and education & health facilities.
4. **Geographical factors:** Natural Resources, Aesthetic Environment, and climate.

**Table 3.1: Name Related Happiness**

Component	Scale of happiness	No of the respondents/ male	No of the respondents/female	Total no of the respondents	Percentage to total
Name	0-3	Nil	Nil	Nil	Nil
	4-7	22	36	58	23.2
	8-10	128	74	192	76.8
Total	0-10	150	100	250	100

**Table 3.1** shows the happiness of an individual related with their name. Most of the people are happy with their name and they feel that their name is good for them. 76.8 percentage of people are very much satisfy with their name by selecting high scale of happiness.23.4 percentage of people are in medium level of happiness. But no one is unhappy with their name. It indicates that the respondents are accepting the name given by their parents

**Table 3.2: Residence Related Happiness**

Residence	Scale of Happiness	Number of Respondents/ Male	Number of Respondents/ Female	Total Number of Respondents	Percentage To Total
Rural	0-3	02	Nil	02	0.8
	4-7	42	22	64	25.6
	8-10	106	78	184	73.6
Total	0-10	150	100	250	100

**Table 3.2** shows happiness related with their living place. This study only limited to Manthani town only and this town considered as rural area. And most of the respondents are happy with their place. Some people with percentage of 25.6 are having medium level of happiness with their town or residence. Only 2 respondents are not happy with their living place and they wanted more development for their place. It indicates the acceptance and adjustment of human being with their available resources in the society.

**Table 3.3** provides the age group of the people in our study area. The highest number of people is in the age group of 21-40 yrs with percentage of 64.8. In the happiness scale this group of people are happier than others. It indicates that these people having more energy levels than other age group and most of the people having own earnings and decision making skill in this age automatically it leads to happiness. Next follows the age group of above 40 are happier with the percentage of 28.8. The age group of below 20 are in the high scale of happiness, in this group most of the people are students. It indicates students are happiest than others.

**Table 3.4** shows the scale of happiness of individual related with their gender. It very interesting that most of the male respondents feel that they are very much happy with their gender and they gave highest scored in the happiness scale. 146 male respondents out of 150 felt that they are very much happy that they born as a boy. It indicates that our society is a male dominated society and there is lot of opportunities and exemptions for men to live independently than women. But it is happiest thing is that female respondents also more happy with their gender, 71 people out of 100 people are selected highest scale of happiness.

But comparatively with men, more number of women are feeling unhappy with their gender, it is only because of societal discrimination

**Table 3.3: Age Related Happiness**

Age	Scale of Happiness	Number of Respondents/Male	Total Number of Respondents/Female	Total Number of Respondents	Percentage To Total
0-20	0-3	Nil	Nil	Nil	Nil
	4-7	Nil	Nil	Nil	Nil
	8-10	12	04	16	6.4
<b>total</b>	<b>0-10</b>	<b>12</b>	<b>04</b>	<b>16</b>	<b>6.4</b>
21-40	0-3	Nil	Nil	Nil	Nil
	4-7	16	06	22	8.8
	8-10	73	67	140	56.0
<b>total</b>	<b>0-10</b>	<b>89</b>	<b>73</b>	<b>162</b>	<b>64.8</b>
Above 40	0-3	Nil	Nil	Nil	Nil
	4-7	14	09	23	9.2
	8-10	35	14	49	19.6
<b>total</b>	<b>0-10</b>	<b>49</b>	<b>23</b>	<b>72</b>	<b>28.8</b>
<b>Grand Total</b>	<b>0-10</b>	<b>150</b>	<b>100</b>	<b>250</b>	<b>100</b>

**Table 3.4** shows the scale of happiness of individual related with their gender. It very interesting that most of the male respondents feel that they are very much happy with their gender and they gave highest scored in the happiness scale. 146 male respondents out of 150 felt that they are very much happy that they born as a boy. It indicates that our society is a male dominated society and there is lot of opportunities and exemptions for men to live independently than women. But it is happiest thing is that female respondents also more happy with their gender, 71 people out of 100 people are selected highest scale of happiness. But comparatively with men, more number of women are feeling unhappy with their gender, it is only because of societal discrimination

**Table3. 4: Gender Related To Happiness**

Gender	Scale of Happiness	Total Number of Respondents	Percentage To Total
Male	0-3	Nil	Nil
	4-7	04	1.6
	8-10	146	58.4
Female	0-3	Nil	Nil
	4-7	29	11.6
	8-10	71	28.4
Total	0-10	250	100

**.Table 3.5: Community Related Happiness**

Community	Scale of Happiness			Total Number of Respondents	Percentage To Total
	Number of Respondents				
	0-4	4-7	8-10		
SC	Nil	Nil	12	12	4.8
ST	NIL	NIL	06	06	2.4
BC	Nil	Nil	156	156	62.4
OC	Nil	Nil	73	73	29.2
Others	Nil	Nil	03	03	1.2
Total	Nil	Nil	250	250	100

**Table 3.5** shows the happiness related to the community of respondents. This table indicates that all of respondents are happy with their community.03 respondents are opposing the caste system and they are not willing to reveal their caste. However the community does not impact the happiness of an individual according our survey.

**Table 3.6** shows the happiness related to marital status of respondents.62.4 percentage of married people are in high scale of happiness. And 14.8 respondents are unmarried.07 out of total respondents are separated or widowed, even though they also scored high. In Our Indian society marriage is an important phenomenon. It influences the social status of the individual.

So that everyone feel secure in the part of marriage system. So that respondents scored high scale of happiness. But the people who suffered from this system are aloof from his and feel happy. This is also proved in our study.

**Table 3.6: Marital Status Related Happiness**

Gender	Scale of Happiness	Number of Respondents		Total Number of Respondents	Percentage To Total
		Male	Female		
Married	0-3	Nil	Nil	Nil	Nil
	4-7	26	24	50	20.0
	8-10	93	63	156	62.4
Unmarried	0-3	Nil	Nil	Nil	Nil
	4-7	12	03	15	6.0
	8-10	15	07	22	8.8
Separated/widowed	0-3	Nil	Nil	Nil	Nil
	4-7	02	02	04	1.6
	8-10	02	01	03	1.2
Total	0-10	150	100	250	100

**Table 3.7** shows the family type of the respondents and how much they are happy with that. Only 46 respondents are having joint family, within them 12 percentage are in medium scale of happiness and 6.4 percentage of respondents are in high scale of happiness. Remaining 204 respondents are in nuclear families'. And most of them with the percentage of 52.8 are in medium scale of happiness. It indicates that people still wanting to be part of joint family system. Modern life style making people more stress and feel lonely may be this is the reason behind that.

**Table 3.7: Family Related Happiness**

Family	Scale of Happiness	No. of Respondents/male	No. of Respondents/female	Total No. of Respondents	Percentage To Total
Joint Family	0-3	Nil	Nil	Nil	Nil
	4-7	21	09	30	12.0
	8-10	02	14	16	6.4
Nuclear Family	0-3	Nil	Nil	Nil	Nil
	4-7	87	45	132	52.8
	8-10	40	32	72	28.8
Total	0-10	150	100	250	100

**Table 3.8** shows the happiness related with the combination of the children. There are 44 respondents are having son and daughter. This combination is the happiest combination in the view of parents. 79.5 percentage of this combination scored the high scale of happiness. 79 respondents out of 106 are selected high scale of happiness in having combination of sons. It is peculiar that 23.6 percentage of people are having medium happiness scale having even though they having sons. 55 percentage of respondents are scored high scale of happiness if they having daughters. It is a good sign for saving of girl child.

**Table 3.9** shows that literate people are happier than illiterate. There are 240 respondents are literate and 40 are illiterate. 50 percent of illiterate people are unhappy with their illiterate status. 71 percent of literate people are in medium level of happiness. It is because of they may be want to go further studies but not.

**Table 3.8: Children Related Happiness**

Type of Combination Of Children	Scale of Happiness	No. of Respondents	No. of Respondents	Total No. of respondents	Percentage To Total
		Male	Female		
Son And Daughter	0-3	Nil	Nil	Nil	Nil
	4-7	07	02	09	20.5
	8-10	19	16	35	79.5
<b>total</b>	<b>0-10</b>	<b>26</b>	<b>18</b>	<b>44</b>	<b>100</b>
Sons Only	0-3	Nil	02	02	1.8
	4-7	09	16	25	23.6
	8-10	50	29	79	74.6
<b>total</b>	<b>0-10</b>	<b>59</b>	<b>47</b>	<b>106</b>	<b>100</b>
Daughters Only	0-3	06	12	18	18.0
	4-7	12	15	27	27.0
	8-10	38	17	55	55.0
<b>total</b>	<b>0-10</b>	<b>56</b>	<b>44</b>	<b>100</b>	<b>100</b>

**Table 3.10** shows the educational qualifications of the respondents and how these qualifications impact the happiness of the individuals. 59 respondents are studied below 10 th class in this only 12 people feeling high scale of happiness, remaining people are feeling unhappy with their qualification. 138 people are having qualifications in between 10 th to Under Graduation. Among them most of the people are in medium scale of happiness, perhaps they may have desire to continue the education but their circumstances are not favored them so that they scored medium level of happiness. 03 respondents are showing more happiness than other in above UG qualification.



**Table 3.9: Literacy Status Related Happiness**

Literacy Status	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Literate	0-3	02	04	06	2.8
	4-7	94	56	150	71.4
	8-10	32	22	54	25.8
<b>total</b>	<b>0-10</b>	<b>128</b>	<b>82</b>	<b>210</b>	<b>100</b>
Illiterate	0-3	12	08	20	50.0
	4-7	04	04	08	16.0
	8-10	06	06	12	24.0
<b>Total</b>	<b>0-10</b>	<b>22</b>	<b>18</b>	<b>40</b>	<b>100</b>

**Table 3.10: Education Qualification Related Happiness**

Educational Qualification	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Below 10th	0-3	16	9	25	
	4-7	12	10	22	
	8-10	08	04	12	
10 <sup>th</sup> To UG	0-3	18	21	39	
	4-7	40	28	68	
	8-10	24	07	31	
Above UG	0-3	02	nil	02	
	4-7	06	02	08	
	8-10	02	01	03	
<b>Total</b>	<b>0-10</b>	<b>128</b>	<b>82</b>	<b>210</b>	<b>100</b>

**Table 3.11: Education Qualification of Spouse,Related Happiness**

Educational Qualification	Scale of Happiness	No. of Respondents/Male	No. of Respondents/ Female	Total No. of Respondents	Percentage To Total
Below 10th	0-3	13	06	13	5.2
	4-7	09	11	20	8.0
	8-10	12	08	20	8.0
10 <sup>th</sup> To UG	0-3	04	10	14	5.6
	4-7	82	15	97	38.8
	8-10	13	26	39	15.6
Above UG	0-3	02	02	04	1.6
	4-7	02	09	15	6.0
	8-10	03	13	18	7.2
Total	0-10	150	100	250	100

**Table 3.11** shows the educational qualifications of the spouse of the respondents and how these qualifications impact the happiness of the individuals. All respondents are answered that their spouse is literate even the illiterate people too. 43 respondents are studied below 10 th class with 21.2 percentage. 60 percentage of the people are having qualifications in between 10 th to Under Graduation. Among them most of the people are in medium scale of happiness. 18 respondents are showing more happiness about their spouse than other in above UG qualification. We asked unmarried respondents on assumption based what they want qualification of their spouse.

**Table 3.12** shows the nature of employment of the respondents. 29 respondents are government employees. Among them only 37.9 percent people are happy with high scoring and remaining people are in medium and low level scale of happiness. It indicates that the people who are with government job are not much happy. But comparatively with these people 25.2 percent of private employees are having high level of Happiness. It is because of they are living in their own place and with their family and relatives. In this group again proved that student are happiest people with having 100 percentage of high level happiness.

**Table 3.12: Employment Nature of Happiness**

Nature of Employment	Scale of Happiness	No. of Respondents/male	No. of Respondents/female	Total No. of Respondents	Percentage To Total
Private	0-3	49	32	82	45.1
	4-7	32	24	56	30.7
	8-10	24	21	46	25.2
<b>Total</b>	<b>0-10</b>	<b>105</b>	<b>77</b>	<b>182</b>	<b>100</b>
Government	0-3	04	02	06	20.7
	4-7	09	03	12	41.4
	8-10	06	05	11	37.9
<b>Total</b>	<b>0-10</b>	<b>19</b>	<b>10</b>	<b>29</b>	<b>100</b>
<b>student</b>	<b>8-10</b>	<b>26</b>	<b>13</b>	<b>37</b>	<b>100</b>
<b>Total</b>	<b>0-10</b>	<b>150</b>	<b>100</b>	<b>250</b>	<b>100</b>

**Table 3.14 shows the** food security of the respondents. 38.4 percent people feel that they have plenty of food and they are very much happy with their food availability. 53.2 percent people are having food for their need only. So that they selected medium scale of happiness. 8.4 percent of the respondent are not having enough food. So that it leads to unhappy as well as ill health. So that we can assume that there is significant relation between food and smile.

**Table 3.15** shows the social security of the respondents. Social security or safety directly related with the human happiness. Because who are in secured feeling they are happy. Natural calamities, communal rites, and war environment of the country, made people feel unhappy.

**Table 3.16** shows the happiness related with income. Maximum numbers of the people are having below 50000 rupees of income. In that 52 percent of the people are in medium and high level of happiness. 68 percent of the respondents who are having income is above 1 lakh are feeling unhappy with their income. It indicates that more money not gives the more happiness.

**Table 3.13: Health Status of Related Happiness**

Health Status	Scale of Happiness	No. of Respondents/ male	No. of Respondents/ female	Total No. of Respondents	Percentage To Total
Healthy	0-3	Nil	Nil	Nil	Nil
	4-7	62	36	98	
	8-10	35	17	53	
<b>Total</b>	<b>0-10</b>	<b>97</b>	<b>53</b>	<b>150</b>	<b>100</b>
Mild ill Health	0-3	29	22	51	
	4-7	19	15	34	
	8-10	04	10	14	
<b>Total</b>	<b>0-10</b>	<b>52</b>	<b>47</b>	<b>99</b>	<b>100</b>
Chronic Ill Health	0-3	Nil	Nil	Nil	Nil
	4-7	Nil	Nil	Nil	Nil
	8-10	Nil	Nil	Nil	Nil
<b>Total</b>	<b>0-10</b>	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>	<b>Nil</b>
<b>Total</b>	<b>0-10</b>	<b>150</b>	<b>100</b>	<b>250</b>	<b>100</b>

**Table, 3.14: Food Security Related Happiness**

Food Security	Scale of Happiness	No. of Respondents/male	No. of Respondents/female	Total No. of Respondents	Percentage To Total
Plenty Of Food	8-10	62	34	96	38.4
Enough To Need	4-7	77	56	133	53.2
Scarcity Of Food	0-3	11	10	21	8.4

Total	0-10	150	100	250	100
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**Table 3.15 Social Security Related Happiness**

Social Security	Scale of Happiness	No. of Respondents/male	No. of Respondents/female	Total No. of Respondents	Percentage To Total
High Secured	8-10	36	22	58	23.2
Secured	4-7	92	77	169	67.6
Low Secured	0-3	22	21	43	17.2
Total	0-10	150	100	250	100

**Table 3.16 shows Income Related Happiness**

Income	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
1-50000	0-3	35	25	60	24.0
	4-7	34	10	44	17.6
	8-10	09	06	15	6.0
50000-100000	0-3	34	27	51	20.4
	4-7	13	12	25	10.0
	8-10	09	07	16	6.4
Above 100000	0-3	11	06	17	6.8
	4-7	02	02	04	1.6
	8-10	03	01	04	1.6
Total	0-10	150	100	250	100

**Table: 3.17, Education& Health Facilities Related Happiness**

Component	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Education Facilities	0-3	97	58	155	62.0
	4-7	33	24	57	22.8
	8-10	20	18	38	15.2
Total	0-10	150	100	250	100

**Table 3.17** shows Education & Health Facilities Related Happiness of the respondents. 62 percent of the people are unhappy with these facilities. They want more development according to this. 15.2 percent of the people are very much happy with these facilities in this area.

**Table 3.18, Pollution Impact on Happiness**

Component	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Pollution Impact	0-3	82	52	134	53.6
	4-7	39	31	70	28.0
	8-10	29	17	46	18.4
Total	0-10	150	100	250	100

**Table 3.18** shows the response of the people according to the pollution. 53.6 percent of respondents are unhappy with this. 28.0 percent of respondents are feeling that minimum level of pollution and they opted medium scale of happiness. 18.4 percent of respondents are feeling there is no pollution and they feeling high level of happiness.

**Table 3.19** shows the response of the people according to the corruption in present society. 66.4 percent of respondents are unhappy with this. 10.8 percent of respondents are feeling that there is no corruption and they feeling high level of happiness.

**Table: 3.19, Corruption Impact On Happiness**

Component	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Corruption Impact	0-3	114	52	166	66.4
	4-7	27	30	57	22.8
	8-10	09	18	27	10.8
Total	0-10	150	100	250	100

**Table:3.20, Aesthetic Environment Related Happiness**

Component	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Aesthetic Environment	0-3	14	26	40	16.0
	4-7	49	47	96	38.4
	8-10	87	27	114	45.6
Total	0-10	150	100	250	100

**Table 3.20** shows the happiness of respondents related with nature beauty. 45.6 percent of respondent are having high level of happiness in this aspect. It is because of River Godavari blessings. 16 percent of the respondents are unhappy because expecting much Aesthetic Environment to their native place.

**Table 3.21** shows the happiness of the people related with physical exercise or physical relaxation. Unfortunately 64 percent people not having any physical relaxation. 17.6 percent respondent are happy with sports and 6.8 are happy with swimming and dance. 11.6 are happy



with yoga.31.2 percent of respondents who are not having any physical relaxation are unhappy.

**Table: 3.21, Physical Relaxation Impact On Happiness**

Physical Relaxation Impact	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Sports	0-3	Nil	Nil	Nil	Nil
	4-7	12	03	15	6.0
	8-10	23	06	29	11.6
Yoga	0-3	Nil	Nil	Nil	Nil
	4-7	07	05	12	4.8
	8-10	13	04	17	6.8
Swimming/ Dance	0-3	Nil	Nil	Nil	nil
	4-7	03	05	08	3.2
	8-10	07	02	09	3.6
No physical relaxation	0-3	42	36	78	31.2
	4-7	25	22	47	18.8
	8-10	18	17	35	14.0
Total	0-10	150	100	250	100

**Table:3.22, Hobbies Related Happiness**

Hobbies	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Books	0-3	Nil	Nil	Nil	Nil
	4-7	Nil	Nil	Nil	Nil
	8-10	08	16	24	9.6
Spirituality	0-3	Nil	Nil	Nil	Nil
	4-7	24	15	39	15.6
	8-10	09	23	32	12.8
Social Service	0-3	Nil	Nil	Nil	Nil
	4-7	23	Nil	23	9.2
	8-10	19	06	25	10.0
Tv/Mobile/ Internet	0-3	02	Nil	02	0.8
	4-7	18	13	31	12.4
	8-10	47	27	74	29.6
Total	0-10	250	100	250	100

**Table 3.22** shows the hobbies related happiness of the respondents. Out of the 250 respondents only 9.6 percent people are having book reading hobby. 32.8 percent of respondents are spending their time with TV/ Mobile and Internet.28.4, 19.2 respondents are happy with the hobbies of Spirituality and Social service. We can assure that there is significant relation between hobbies and happiness with this data.

**Table: 3.23: Addiction Related Happiness**

Addiction	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Alcohol	0-3	26	Nil	26	10.4
	4-7	09	Nil	09	3.6
	8-10	02	Nil	02	0.8
Smoking	0-3	37	Nil	37	14.8
	4-7	11	03	14	5.6
	8-10	03	Nil	03	1.2
Gambling	0-3	19	Nil	19	7.6
	4-7	03	Nil	03	1.2
	8-10	03	Nil	03	1.2
No addiction	0-3	04	Nil	04	1.6
	4-7	12	06	18	7.2
	8-10	21	91	112	44.8
Total	0-10	150	100	250	100

**Table: 3.24, Contentment Related Happiness**

Component	Scale of Happiness	No. of Respondents/Male	No. of Respondents/Female	Total No. of Respondents	Percentage To Total
Contentment	0-3	Nil	02	02	0.8
	4-7	64	34	98	39.2
	8-10	86	64	150	60.0
Total	0-10	150	100	250	100

**Table 3.23** shows the addiction related happiness. The respondents in our survey having addiction of alcohol, smoking and gambling. Fortunately only 116 respondents are addicted to bad habits. They are also not happy with their addiction. Most of the addicted people selected low level of happiness only.134 respondents are not having any addiction. It is peculiar that 4 respondents feel unhappy of not having any addiction. It may because of their missing feel of enjoyment.

**Table: 3.24,** Contentment Related Happiness of the respondents. We surveyed that how much contentment they have with their present life.60 percentage of people are happy with their present life. And almost 40 percent of people are in medium level of happiness.2 respondents are not satisfied with their life.

This III chapter was completed here. Findings based on above discussion are explained in chapter IV

\*\*\*\*\*

## CHAPTER -IV

### CONCLUSIONS and SUGGESTIONS



## Chapter –IV

### Conclusions and suggestions.

Present study discusses the findings, conclusions and suggestions. In present days we have to adopt the nature of Happy go lucky. Otherwise we have to suffer from mental and physical ill health.

According to WHR, India ranks 122 th in the World Happiness Index 2017 ,118 th in the World Happiness Index 2016, down from 117th in 2015,and India had ranked 111th in 2013.The report said that India was among the group of 10 countries witnessing the biggest happiness declines, along with Venezuela, Saudi Arabia, Egypt, Yemen and Botswana. India comes below Somalia (76), China (83), Pakistan (92), Iran (105), Palestinian Territories (108) and Bangladesh (110). If we analyse that why is India unhappy, the World Happiness index takes into account factors like GDP per capita, social support of having someone to count on in times of trouble, freedom to make life choices, healthy life expectancy, generosity and perceptions of corruption. Leading experts across fields -- economics, psychology, survey analysis, national statistics, health, public policy and more – describe how measurements of well-being can be used effectively to assess the progress of nations.

- A 13 year analysis of Crime Data reveals there is one rape every 30 minutes in India
- One in five cases of honour killing internationally every year comes from India (United Nations)
- The rate of malnutrition cases among children in India is almost five times more than in China and twice than in Sub-Saharan Africa (The World Bank Report)
- 12 million children spend their childhood at work and not in a classroom (Census 2011)
- 270 million persons live below the Tendulkar Poverty Line (NSSO Survey 2013)
- People are happier living in societies where there is less inequality of happiness.
- In addition to these startling facts, the scams and controversies which keep popping up every other day are only adding to the misery.

**4.1 Mental Health:** Back in 2011, a WHO-sponsored study concluded that while around 9% of people in India reported having an extended period of depression within their lifetime, nearly 36% suffered from what is called Major Depressive Episode (MDE).In 2013, it was reported that 10% of the Indian population suffered from “minor” mental disorders such as stress, anxiety and depression. With this in mind, India's low ranking in The World Happiness Report doesn't seem odd. A heart-breaking 72% felt they needed to conceal their diagnoses because they anticipated censure or

discrimination. Currently India has just 23% of the required psychiatrists, 25% of required psychiatric nurses and only 3% of the required clinical psychologists and psychiatric social workers. This means India presently 3500 psychiatrists, 500 clinical psychologists 300 psychiatric social workers and about a 1,000 psychiatric nurses. Add to that the fact that going to see a counsellor or a psychiatrist is invariably treated like a dirty secret. The stereotype of India is that it is a place where loneliness vanishes. We've surrounded ourselves with stories and images of well-meaning, meddling family members; strangers who invade your personal space because they figure you need help; big fat Indian weddings, and jubilant festivals like Holi and Durga Puja in which crowds become comrades. It isn't as though none of this is true, but it is equally evident that as a society, we are going through some difficult times. Let's hope we are able to talk our way out of them.

#### **4.2 Findings:**

- The respondents are happy with the things which are not in their hands like caste, name, and residing area. So that these factors not having much impact on individual happiness.
- Almost all of the respondents are very much satisfied with their gender, Female respondents also answered in positive manner.
- BY the study, people how are in age between 1-40 are happiest.
- This study reveals that the respondents are happy with their caste and religion. No one answered that they may have born in some other caste. It indicates that the strong basis of caste system in our society and they are very much having social and emotional attachment with their caste.
- Most of The Married People Are Happier Than Separated And Widowed People. Unmarried People Aslo0 Happy Because They Don't Have Any Major Family Responsibilities
- .Nuclear families are happier than joint families, but we have to focus the point, these nuclear families are not in high level happiness.
- It indicates that the people are not very much happy with nuclear family system. They are internally wanting to be in joint family system. But modern speed era with hunting of lot of luxuries making them to be separated.
- Having both son & daughter as children is the happiest combination for the parents.
- Literate people are happiest
- High education qualification people are happier than lower qualification people.
- Marrying highly educated spouse made the people happiest.

- Student group are happiest
- Unemployment people are unhappy
- High percentage of private and government employees are in medium level happiness. It expresses that employment status is not the factor of the happiness.
- Sufficient food made human beings happy. Empty stomach does not have ability to smile.
- Social security having significant impact on Happiness.
- Health people are happiest
- Income is not having much impact on happiness
- Having standard health and education facilities making people happy.
- Pollution and aesthetic environment are also significant causes for happiness. Clean and green ecological environment lead to healthy and happy environment.
- Corrupted society and individuals made the people feel unhappy and passive.
- Those who are doing regular physical exercises, are more happier than others
- Having Good habits are best way to contentment and happiness. But in present days people are addicted to technology and losing their human emotions.
- Addiction of alcohol, smoking and gambling are giving temporary happiness. These addicted people also knew this and they are unhappy with their addiction.
- Most of the people satisfied with their present living style. They especially expecting corruption and pollution less society.

#### **4.3 Suggestions:**

- Being well makes people
- Accepting ourselves.
- Stable family life.
- Stability of mind
- Fulfillment of minimum needs
- Improvement of positive thinking
- Eradication of poverty
- Reducing dependency on outer people or objects
- Strong social support
- Healthy life expectancy
- Low corruption and pollution



- Strong and truthful institutions
- Freedom to make life choices

**4.4 Conclusion:** Happiness index is measured using parameters like Housing, Income Work, Community, Education, Environment, Health, life satisfaction, safety and life work balance. Happier countries tend to be richer countries but more important happiness than income are social factors like the strength of social support absence of corruption and the degree of personal freedom. As living standards have risen happiness has increased but it is not same to all economies. And unemployment causes as much as happiness. Mental health is the biggest factor affecting happiness in any country. Stable family life and enduring marriages are for the happiness of parents and children According to surveys women are happier than men. Happiness is lowest in middle age.

According to happiness index report, some countries are happy on the basis of high living standards and employment, Some are on the basis of mental health and family stability, Some are on the basis peace and having average income and living standards and Some are on the basis of offering a relatively low income tax free health care and education to citizens.

Even in times of great technological advancement, easy of travel smooth connectivity and all that has made our live more comfortable, even though we are not happy. Large sections are dissatisfied with current political set up some are with religious disturbances. A part of our vexation can also be attributed to inequitable resource distribution and deploring climate. Growth in double digits cannot ensure the real wellbeing and satisfaction of people. The objectives of government should not be within the periphery of macro-economic growth, member boosting and revenue generation, it ought to venture in to a citizens life and ensure his contentment.

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# APPENDICES



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**STUDENT STUDY PROJECT ( 2017-2018)**

**STURCTURED QUESTIONNAIRE**

**HAPPINESS INDEX [సంతోష సూచిక]**

1. NAME [పేరు] :
2. HABITATION[నివాసస్థలం] :
3. AGE[వయస్సు] :
4. GENDER[లింగం] :
5. SOCIAL STATUS [సామాజికవర్గం] :
6. MARITAL STATUS [వివాహ స్థితి] :

[MARRIED]వివాహితులు :

[UNMARRIED]ఆవివాహితులు :

7. SPOUSE AGE[భార్య/భర్త వయస్సు] :
8. TYPE OF FAMILY[కుటుంబ స్వభావం] :  
అ) వ్యక్తిగత :  
ఆ) ఉమ్మడి :

9. NO.OF FAMILY MEMBERS కుటుంబ సభ్యుల సంఖ్య :

10. [CHILDREN]సంతానం :

అ)[NUMBER]సంఖ్య :

ఆ) [AGE]వయస్సు :

ఇ) కూతురు/కొడుకు:

ఈ) బంధువులు /స్నేహితులు:

11. [LITERACY STATUS ]అక్షరాస్యత స్థితి :

విద్యార్హతలు

12. [SPOUSE EDUCATIONAL QUALIFICATIONS]జీవిత భాగస్వామి

విద్యార్హత:

13. [CHILDREN STUDY STATUS]సంతానం చదువుతున్న తరగతి :

14. [PROFESSION/EMPLOYMENT]వృత్తి/ఉపాధి :

15. [EMPLOYMENT STATUS]ఉద్యోగ స్వభావం :

అ) ప్రవేట్ /ప్రభుత్వం

16. INCOME (ఆదాయం):

అ: 50000 కంటే తక్కువ

ఆ:50000-100000 మధ్య

ఇ:100000 కంటే ఎక్కువ

17. [HEALTH STATUS OF THE FAMILY]కుటుంబ సభ్యుల ఆరోగ్య స్థితి :

18. [CHRONIC DISEASED PATIENTS ] ధీర్ఘకాలిక వ్యాధి గ్రస్తులు;

19.[AVAILABILITY FOOD SECURITY]ఆహార లభ్యత :

20: ( SOCIAL SECURITY) సామాజిక భద్రత:

21. (EDUCATION FACILITIES) విద్యా సౌకర్యాలు :

22:(HEALTH FACILITIES) ఆరోగ్య సౌకర్యాలు:

23:(NATURAL RESOURCES) ప్రకృతి వనరులు :

24: ( AESTHETIC ENVIRONMENT) ఆహ్లాదకరమైన/ అందమైన ప్రకృతి:

25.[POLLUTION ]కాలుష్యం ;

26.[CORRUPTION]అవినీతి :

27.PHISICAL EXERSIZES (శారీరిక వ్యాయామం):

అ:ఆటలు

ఆ: యోగ

ఇ: నృత్యం

ఈ: ఈత

28.( HOBBIES) అభిరుచులు

అ:టివి/సెల్ ఫోన్/ఇంటర్నెట్ :

ఆ: అధ్యాత్మికత

ఇ: సేవ

ఈ: పుస్తకాలు :

29.( ADDICTION) వ్యసనము:

అ:మత్తుమందు

ఆ:పొగతాగడం

ఇ:జూదము

30. ( CONTENTMENT) తృప్తి:

31. మీకు ఆనందాన్ని కలిగించే ఇతర ఆంశాలు :

32. సంతోషాన్ని పెంచడానికి మీరిచ్చే సూచనలు :

\*\*\*\*\*

# Thank you



**Title: IDENTIFYING PHONEMES AND PRACTICING  
PHONEMIC TRANSCRIPTION IN A PLAYWAY METHOD**



**A STUDENT STUDY PROJECT** submitted to the  
**Commissioner of Collegiate Education, Hyderabad**

Under the **JIGNASA**

**Submitted by,**

1. Manthani Saikumar, B.Z.C I Year
2. Seggem Mounika, B.A. I Year
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**Dist. PEDDAPALLI**



## **Declaration**

We do hereby declare that the work presented in this study project entitled **“IDENTIFYING PHONEMES AND PRACTICING PHONEMIC TRANSCRIPTION IN A PLAYWAY METHOD”** is an original one and has been carried out by us in the Department of English, Government Degree College, Manthani, Dist. Peddapalli and has not been submitted either in part or in full for the award of any Degree or Diploma of any University earlier.

Date: 01.12.2017

Manthani Saikumar

Seggem Mounika

Aare Mamatha

Manthani Sathish

S. Sandhya

Place: Manthani

P. Pallavi

**DEPARTMENT OF ENGLISH**  
**GOVERNMENT DEGREE COLLEGE, MANTHANI**  
**DIST: PEDDAPALLI**

**CERTIFICATE**

This is to certify that the **JIGNASA-Students' Study Project** entitled **“IDENTIFYING PHONEMES AND PRACTICING PHONEMIC TRANSCRIPTION IN A PLAYWAY METHOD”** is an original one and has been carried out by **ManthaniSaikumar, Seggem Mounika, Aare Mamatha, Manthani Sathish, S. SandhyaandP. Pallavi** in the Department of English, Government Degree College,Manthani, Dist: Peddapalli. It was carried out under my supervision. It is an original work done by them and has not been submitted elsewhere for the award of any Degree or Diploma. This study project is of the standard expected and I strongly recommend that it may be sent for evaluation.

Date: 01.12.2017

Place: Manthani

**S. ANJANI**

**Study Project Supervisor**

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# IDENTIFYING PHONEMES AND PRACTICING PHONEMIC TRANSCRIPTION IN A PLAYWAY METHOD

## 1. INTRODUCTION

### ABSTRACT

The aim of this project is to enable the students who are from Telugu medium to identify the speech sounds easily to improve their English pronunciation skills. Transcription of phonetic symbols comes in the examination and has been left by the students. But it is very easy to identify and practice the transcription with the help of the activities using phonetic chart and the cards with the phonetic symbols prepared by the students.

Key words: speech sounds, transcription, phonetic chart, vowels, consonants

### INTRODUCTION

***“Knowledge is Power.”*** Knowledge of English language strengthens and widens the career of a person. Speaking fluent English is the main qualification for many jobs nowadays.

The importance of pronunciation has been recognized by the academicians. So the speech sounds got the place in the text books as well as in the question papers. But many students and most of the lecturers leave this topic under “choice”.

All most all the students with Telugu medium back ground are afraid of the speech sounds when they see the symbols for the first time. The phonetic symbols look like “Aliens” to them.

English is different from many other languages. Some languages like Telugu and Hindi have same sounds for same letters whereas English has many letters with two or more sounds and many letters that are silent. The alphabet in English has 26 letters but English (British) has 44 sounds.

The letters of the alphabet can be a poor guide to pronunciation. Students face difficulty in pronouncing the words because

- Some letters have more than one sound
- Sometimes letters are not pronounced at all
- The same sound may be represented by different letters

Group activities make the students to get interest in learning the phonetic symbols.

Preparation of phonetic chart and the cards with the symbols involve them the learning process. They participate actively and enjoy the process of learning by doing.

## **2. OBJECTIVES**

- **To make the Telugu medium students comfortable with speech sounds**
- **To identify phonemes easily.**
- **To practice transcription in a play way.**
- **To attempt the questions in the exams without fear.**
- **To speak better English.**

### 3. METHODOLOGY

*“Tell me I will forget; show me I may remember; involve me I will understand”*

Chinese Proverb

Learning phonemic symbols is not a difficult task. Students can learn the symbols in an easy method. There are 44 symbols. 24 consonants and 20 vowel sounds. Monophthongs contain one vowel sound where as diphthongs have two vowel sounds.

The consonants are the easiest phonemic symbols to learn. Seventeen of the consonants have the same form as a letter of the alphabet. Therefore, it is the best to start by teaching students a large number of consonant symbols and a small number of easy vowel symbols such as, /ɪ/ and /i:/, /ʊ/, /u:/and /e/. Note, however, that the sound /j/ represents the initial sound of 'yellow', not the initial sound of 'judge'. Experience shows that students are very likely to make mistakes with the symbol /j/, so it needs special attention.

Nineteen out of the total phonetic symbols have the same sound and shape as letters of the alphabet. This means that some words, such as 'pet', look the same whether written with phonemic symbols or letters of the alphabet. That leaves just 25 to learn.

Most native-speaker teachers of English learn grammar from the textbooks they use when they first start teaching, because they are unlikely to have been exposed to any formal study of English grammar. They learn by teaching, which is a very effective way of learning. It is possible to learn phonemic symbols in the same way. You just need to keep one symbol ahead of the students.

## PHONETIC CHART

MONOPHTHONGS (single vowels)				DIPHTHONGS (two vowels)			
ɪ	i:	ʊ	u:	eɪ	ɔɪ	aɪ	
ch <u>i</u> p	ch <u>e</u> ap	fo <u>o</u> t	sh <u>o</u> ot	ca <u>e</u>	co <u>i</u> n	li <u>e</u>	
e	ɜ:	ə	ɔ:	eə	ɪə	ʊə	
l <u>e</u> ft	B <u>i</u> rd	tea <u>ch</u> er	ta <u>l</u>	ha <u>i</u> r	he <u>r</u> e	to <u>u</u> rist	
æ	ʌ	ɒ	ɑ:	əʊ	aʊ		
h <u>a</u> t	C <u>u</u> p	po <u>t</u>	ca <u>r</u>	sho <u>w</u>	mo <u>u</u> th		
CONSONANTS							
(unvoiced)							
p	f	θ	t	s	ʃ	tʃ	k
p <u>e</u> n	f <u>r</u> ee	th <u>i</u> nk	t <u>r</u> ee	s <u>e</u> a	sh <u>i</u> p	ch <u>e</u> ap	co <u>i</u> n
(voiced)							
b	v	ð	d	z	ʒ	dʒ	g
br <u>e</u> ad	vi <u>d</u> eo	th <u>i</u> s	do <u>g</u>	zo <u>o</u>	televis <u>i</u> on	jo <u>k</u> e	go <u>o</u>
m	n	ŋ	h	w	l	r	j
mo <u>u</u> se	no <u>w</u>	th <u>i</u> ng	ho <u>p</u> e	wa <u>t</u> er	lo <u>v</u> e	ra <u>t</u>	yo <u>u</u>

## EXAMPLES



Students are given at least three examples for each sound. They are encouraged to give more examples to each sound.

### Consonants

<b>p</b>	pen, copy, happen
<b>b</b>	back, baby, job
<b>t</b>	tea, tight, button
<b>d</b>	day, ladder, odd
<b>k</b>	key, clock, school
<b>g</b>	get, giggle, ghost
<b>tʃ</b>	church, match, nature
<b>dʒ</b>	judge, age, soldier
<b>f</b>	fat, coffee, rough, photo
<b>v</b>	view, heavy, move
<b>θ</b>	thing, author, path
<b>ð</b>	this, other, smooth
<b>s</b>	soon, cease, sister
<b>z</b>	zero, music, roses, buzz
<b>ʃ</b>	ship, sure, n <u>a</u> tional
<b>ʒ</b>	plea <u>s</u> ure, vi <u>s</u> ion
<b>h</b>	hot, whole, ahead
<b>m</b>	more, hammer, sum
<b>n</b>	nice, know, funny, sun
<b>ŋ</b>	ring, anger, thanks, sung
<b>l</b>	light, valley, feel
<b>r</b>	right, wrong, sorry, arrange
<b>j</b>	yet, use, beauty, few
<b>w</b>	wet, one, when, queen

## Vowels

ɪ	kit, bid, hymn, minute
e	dress, bed, head, many
æ	trap, bad, apple
ɒ	lot, odd, wash
ʌ	strut, mud, love, blood
ʊ	foot, good, put
iː	fleece, sea, machine
eɪ	face, day, break
aɪ	price, high, try
ɔɪ	choice, boy
əʊ	goat, show, no
aʊ	mouth, now
ɪə	near, here, weary
eə	square, fair, various
ɑː	start, father
ɔː	thought, law, north, war
ʊə	poor, jury, cure
ɜː	nurse, stir, learn, refer
ə	<u>a</u> bout, comm <u>o</u> n, stand <u>ar</u> d
uː	food, route, mute

**Listen and repeat**

This is the first and an easy method of teaching the speech sounds in English. The chart is a map of English sounds. The students can use their eyes to help their ears. The chart is shown to the learners and they listen to the teacher and repeat the sounds.

A chart of Phonemic Symbols is a part of every student's treasure of resources to learn pronunciation. Just as they have a dictionary for vocabulary and a grammar book for grammar, so they need reference materials for pronunciation: the phonemic symbols and simple, key words that show the sound of each symbol. Phonemic symbols on the wall in a classroom remind them that there are 44.

## **PRACTICE EXERCISES**

**Students have to do some practice exercises by doing the activity with the help of the cards. Students are divided into groups. Each group is given the cards with symbols. They make some words with the given symbols. The other groups have to identify the word and should tell its spelling. Initially, the students are given some clues to identify the word easily like colours, numbers, family etc.**

The students are able to hold and use the cards with the symbols on. They are using the sense of touch as well. The more senses students use, the better they will learn.

## **COLOURS**

1. gri:n →  **GREEN**
2. gəʊld →  **GOLD**
3. blu: →  **BLUE**
4. blæk →  **BLACK**
5. 'ɒrɪndʒ →  **ORANGE**
  
6. braʊn →  **BROWN**

7. 'jeləʊ →  YELLOW
8. greɪ →  GREY
9. 'pɜ:pəl →  PURPLE
10. waɪt →  WHITE

## BODY

1. ɑ:m →  ARM
2. ɪə →  EAR
3. aɪ →  EYE
4. feɪs →  FACE
5. fʊt →  FOOT
6. heə →  HAIR
7. hænd →  HAND
8. maʊθ →  MOUTH
9. nəʊz →  NOSE
10. 'ʃəʊldə →  SHOULDER

## NUMBERS

1. faɪv →  FIVE
2. wʌn →  ONE
3. naɪn →  NINE
4. θri: →  THREE

5. fɔ: →  FOUR
6. tu: →  TWO
7. eɪt →  EIGHT
8. ˌfɔ:ˈti:n →  FOURTEEN
9. ˌfɪfˈti:n →  FIFTEEN
10. ˌθɜ:ˈti:n →  THIRTEEN

## FAMILY

1. sistə →  SISTER
2. ˈbrʌðə →  BROTHER
3. ˈkʌzn →  COUSIN
4. ɑ:nt →  AUNT
5. ˈfɑ:ðə →  FATHER
6. ˈmʌðə →  MOTHER
7. ˈdɔ:tə →  DAUGHTER
8. ni:s →  NIECE
9. ˈnevju: →  NEPHEW
10. ˈʌŋkl →  UNCLE

## 4. FINDINGS

**Anyone can remember more than 25 symbols easily after participating in these activities by using chart and cards.**

**The students feel comfortable to learn the symbols in this method. They can identify the symbols and make the transcription of some simple words easily.**

The students identify that only seven symbols are different out of the 24 consonant sounds. Remaining seventeen sounds of consonants look like the regular alphabet. They notice that the sound /j/ represents the initial sound of 'yellow'.

The students learn that some vowel sounds sound like the vowel sounds of Telugu, their mother tongue. They know that the long vowel sounds have the symbol ː and it is very helpful to the students. Learning phonemic symbols will help students to understand the importance of length and voicing.

Phonetic symbols are a perfect guide to correct pronunciation. But many students don't understand the symbols that appear next to the words whenever they refer a dictionary.

Phonemic symbols are the reliable resources for good pronunciation. Each phonetic symbol represents a unique spoken sound. These speech sounds are also called phonemes.

## **5. CONCLUSION**

## **Benefits of learning Phonemic Symbols**

1. Knowing phonemic symbols enables students to get the maximum information from dictionaries. So the students can use dictionaries effectively.
2. Students can become independent learners. They can find out the pronunciation of a word by themselves without asking the teacher.
3. Phonemic symbols are a visual aid. Students can see that two words differ, or are the same, in pronunciation.

There is no end to our study of grammar and vocabulary but phonemic symbols are limited, visual and physical. They may seem challenging at first but it is like learning to swim or ride a bicycle. Once you can do it, it is easy and you never forget.

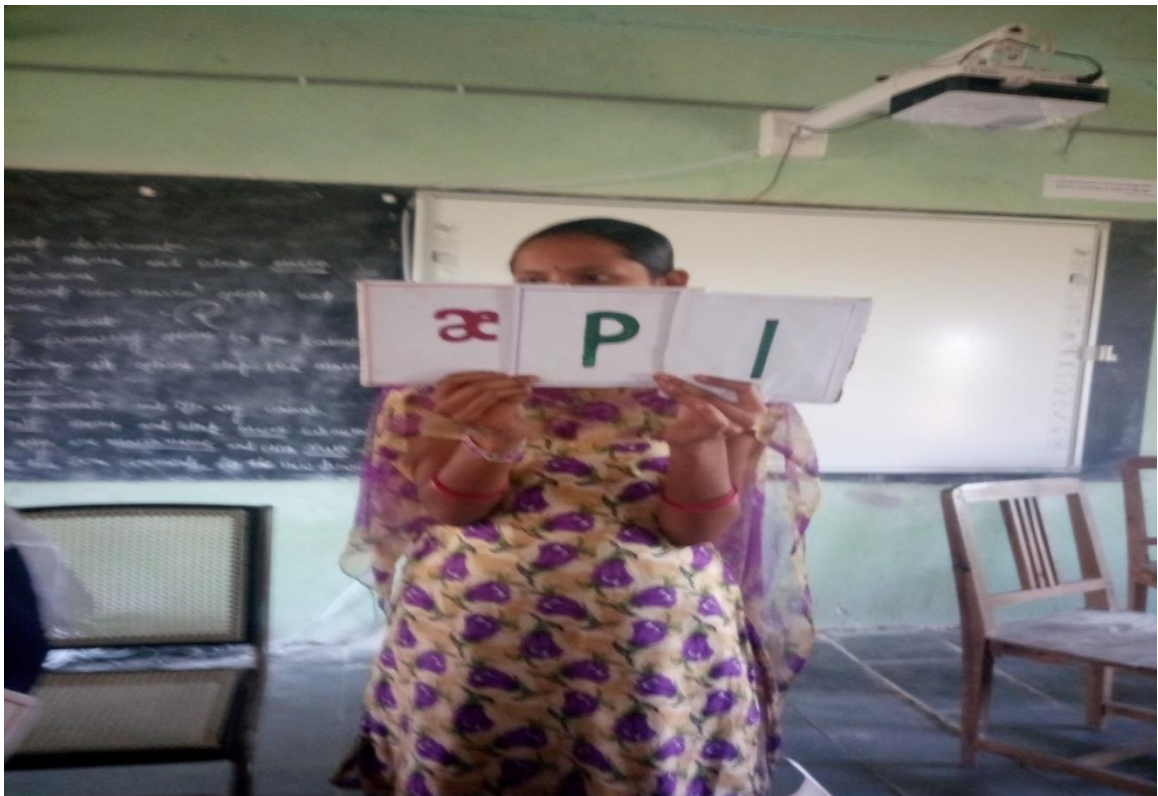
There are some limitations. The students may not pronounce the words exactly. It needs more practice to be perfect.

**There is no need to have a perfect English accent in using phonemic symbols at the initial stage.**

It is true that the 44 phonemes in British English are based on the sounds of Received Pronunciation, an accent which is not frequently heard nowadays. There is not just one perfect way to say each sound - there is an acceptable range of pronunciations.









# STUDENT STUDY PROJECT

TITLE: EXPERIMENTAL VERIFICATION OF EFFECT OF  
MASS OF THE BOB ON TIME PERIOD OF A SIMPLE  
PENDULUM



**SUBMITTED TO THE COMMISSIONER OF COLLEGIATE  
EDUCATION, HYD**

*Under the*

**JIGNASA**

*Submitted by*

1. A.Saikumar, B.Sc. III Year
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**MENTOR: S. KRISHNAPRASAD, Assistant Professor of physics**

**DEPARTMENT OF PHYSICS**  
**Government Degree College, Manthani**  
**Dist: Peddapalli**

## **DECLARATION**

We do hereby declare that the work presented in this study project entitled **experimental verification of effect of mass of the bob on time period of a simple pendulum** is an original one and has been carried out by us in the Department of Economics Government Degree College, Manthani, Dist: Peddapalli and has not been submitted either in part or in full for the award of any Degree or Diploma of any University earlier.

Date:

Place: Manthani

### **B.Sc III YEAR STUDENTS**

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**DEPARTMENT OF PHYSICS  
GOVERNMENT DEGREE COLLEGE, MANTHANI.  
DIST: PEDDAPALLI**

**CERTIFICATE**

This is to certify that the JIGNASA-Students' Study Project entitled "experimental verification of effect of mass of the bob on time period of a simple pendulum" an original one and has been carried out by A.Saikumar ,K.Thirupathi ,A.Raju, T.Ajay, R.Mohan (**B.Sc III Year students**) in the Department of physics Government Degree College,Manthani, Dist: Peddapalli carried out by under my supervision. It is a bonafide work done by them and has not been submitted elsewhere for the award of any Degree or Diploma. This study project is of the standard expected and I strongly recommend that it may be sent for evaluation.

Date:

( **S.KRISHNAPRASAD**)

Place:

**Study Project mentor**



## ACKNOWLEDGEMENTS

We feel it great honour and proud privilege to extend our heartfelt gratitude to **Smt. A.Vani Prasad, IAS**, garu, the Commissioner of Collegiate Education, Hyderabad, Telangana, for introducing such a wonderful, research oriented and skill development programme of JIGNASA to Degree College Students across the State of Telangana. Indeed, this programme develops the academic qualities, inquisitiveness, creative talent and the bent of research in the students. Thank you very much Madam for giving us an opportunity to undertake study projects under the **JIGNASA-Student Study Projects**. We owe a great debt of gratitude to **Sri. D.Venkatesh Garu**, beloved Principal of this College and the Man of dedication and enthusiasm, for his constant motivation, encouragement for undertaking this study project and constructive suggestions for completion of this project. We feel immensely happy to extend deep sense of gratitude to our teacher and research supervisor **S.Krishnaprasad**, Asst. Professor, Department of physics, Government Degree College, Manthani. Who has guided our research work with meticulous care and scholarly advice. She spared her valuable time, and personal care and offered constructive suggestions at every stage of our research work, without which this study project would not have seen the light of the day. We thank one and all who have directly and indirectly encouraged and supported us to carry out this study project.

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## INTRODUCTION

A simple pendulum ideally consists of a small heavy bob attached to a rigid support by means of a light inextensible string. When we speak of the motion of the simple pendulum, we refer to the oscillations it performs, when the bob is taken to a height (the string remaining taut) and released. Further, with reference to the above kind of motion, we define amplitude, time-period, and frequency as follows

**Amplitude:-** The amplitude of a simple pendulum is defined as the maximum angular deviation from the mean position of the bob.

**Oscillations:-** If the pendulum moves from one extreme position to the other and back to the first it is said to have performed one oscillation

**Time Period:-** The time period of the simple pendulum is defined as the time required by the pendulum to complete one oscillation

**Frequency :-** The frequency of the simple pendulum is defined as the number of oscillations performed per unit time.

### AIMS AND OBJECTIVES:

The purposes of this experiment are:

- (1) to study the motion of a simple pendulum,
- (2) to study simple harmonic motion,
- (3) to learn the definitions of period, frequency, and amplitude,
- (4) to learn the relationships between the period and length of a simple pendulum
- (5) to study the effect of mass of the bob on time period of a simple pendulum



## REVIEW OF LITERATURE:

A simple pendulum may be described ideally as a point mass suspended by a massless string from some point about which it is allowed to swing back and forth in a plane. A simple pendulum can be approximated by a small metal sphere which has a small radius and a large mass when compared relatively to the length and mass of the light string from which it is suspended. If a pendulum is set in motion so that it swings back and forth, its motion will be periodic.

The time that it takes to make one complete oscillation is defined as the period  $T$ . Another useful quantity used to describe periodic motion is the frequency of oscillation. The frequency  $f$  of the oscillations is the number of oscillations that occur per unit time and is the inverse of the period,  $f = 1/T$ . Similarly, the period is the inverse of the frequency,  $T = 1/f$ . The maximum distance that the mass is displaced from its equilibrium position is defined as the amplitude of the oscillation.

When a simple pendulum is displaced from its equilibrium position, there will be a restoring force that moves the pendulum back towards its equilibrium position. As the motion of the pendulum carries it past the equilibrium position, the restoring force changes its direction so that it is still directed towards the equilibrium position. If the restoring force  $F$  is opposite and directly proportional to the displacement  $x$  from the equilibrium position,

so that it satisfies the relationship

$$F = - k x \text{ ----- (1)}$$

then the motion of the pendulum will be simple harmonic motion and its period can be calculated using the equation for the period of simple harmonic motion

$$T = 2\pi \sqrt{\frac{m}{k}} \text{-----}. (2)$$

It can be shown that if the amplitude of the motion is kept small, Equation (2) will be satisfied and the motion of a simple pendulum will be simple harmonic motion, and Equation (2) can be used.

$$F = mg \sin \theta \text{-----}(3).$$

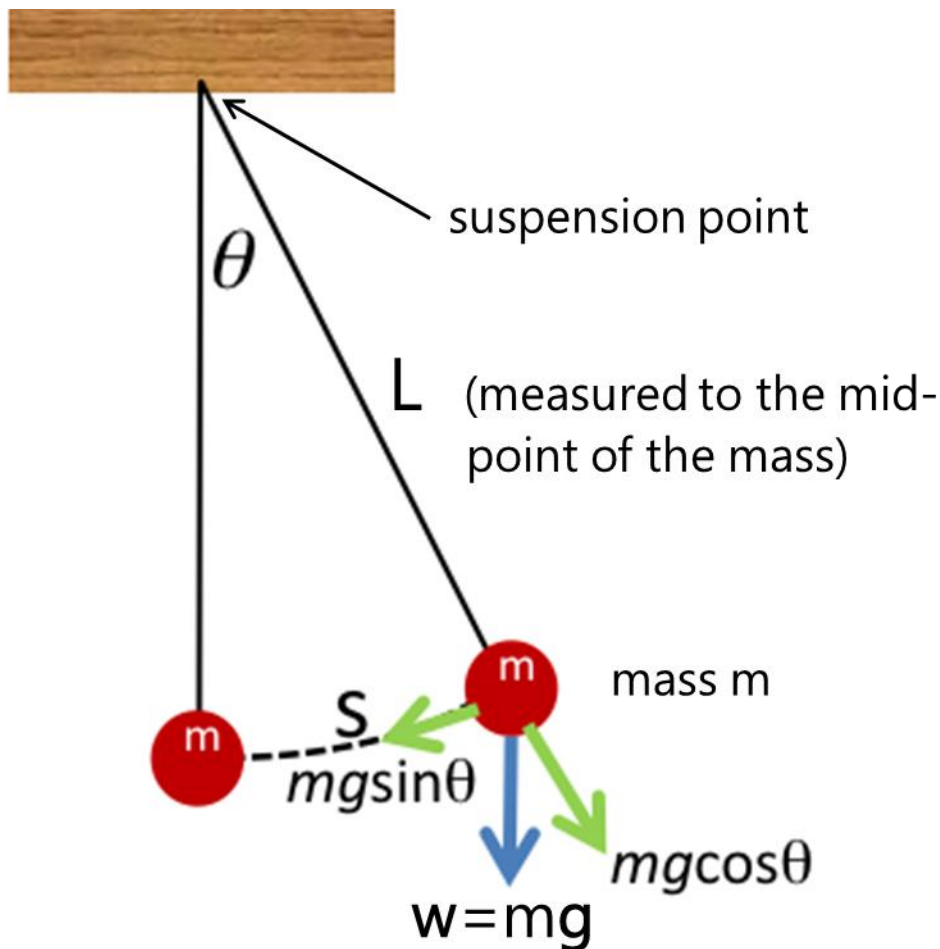


Diagram illustrating the restoring force for a simple pendulum. The restoring force for a simple pendulum is supplied by the vector sum of the gravitational force on the mass,  $mg$ , and the tension in the string,  $T$ .

The magnitude of the restoring force depends on the gravitational force and the displacement of the mass from the equilibrium position.

Consider Figure where a mass  $m$  is suspended by a string of length  $l$  and is displaced from its equilibrium position by an angle  $\theta$  and a distance  $x$  along the arc through which the mass moves.

The gravitational force can be resolved into two components, one along the radial direction, away from the point of suspension, and one along the arc in the direction that the mass moves. The component of the gravitational force along the arc provides the restoring force  $F$  and is given by  $F = -mg \sin\theta$ ----- (3)

where  $g$  is the acceleration of gravity,  $\theta$  is the angle the pendulum is displaced, and the minus sign indicates that the force is opposite to the displacement.

For small amplitudes where  $\theta$  is small,  $\sin\theta$  can be approximated by  $\theta$  measured in radians so that Equation (3) can be written as

$$F = -mg\theta$$
----- (4)

The angle  $\theta$  in radians is  $x/l$ , the arc length divided by the length of the pendulum or the radius of the circle in which the mass moves.

The restoring force is then given by  $F = -mg\frac{x}{l}$ -----l(5)

and is directly proportional to the displacement  $x$  and is in the form of Equation (1) where  $mgk = \frac{mg}{l}$

Substituting this value of  $k$  into Equation (2)

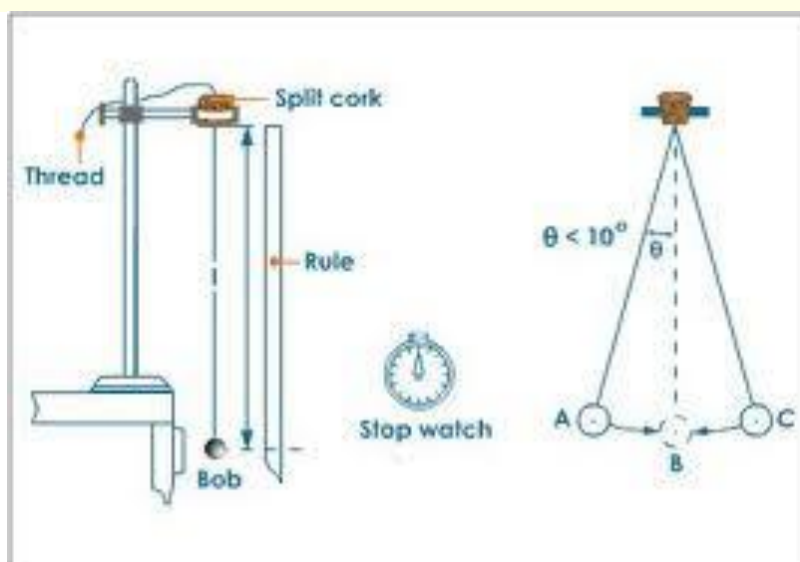
$$T = 2\pi \sqrt{\frac{m}{\frac{mg}{l}}}$$
----- (6)

And  $T = 2\pi\sqrt{\frac{l}{g}}$ ----- (7)

Therefore, for small amplitudes the period of a simple pendulum depends only on its length and the value of the acceleration due to gravity

## RESEARCH METHODOLOGY

Theoretically mass of the bob has no effect on time period of a simple pendulum, to prove it experimentally in the lab, simple pendulum experiment conducted to find its time period through the following steps



- 1) A small bob of mass 50gm attached to the thread. The thread was held by a clamp of a retort stand
- 2) Initially length of the pendulum is taken as 80cm.the bob of the pendulum was displaced through a small angle less than 10degrees and released
- 3) Simple pendulum executes oscillations which are simple harmonic.
- 4) The time taken to complete 10 oscillations was noted by using stop watch in two trails, average time for 10 oscillations calculated
- 5) Time period T is calculated, and noted in the observation table
- 6) The above procedure is repeated for different masses of the bob,for the length 80 cm
- 7) Similarly the procedure repeated for lengths 70 cm,60 cm,50m.the values are tabulated



### OBSERVATIONS AND FINDINGS:

1) length of string,  $l = 80\text{cm}$

Mass of the bob in ( gm )	Time taken for 10 oscillation, t ( s )			Period of oscillation $T = t/10$	Theoretically calculated time period	difference
	$t_1$	$t_2$	Average ( t )			
50	18	17	17.5	1.75	1.79	0.04
100	17	17.5	17.25	1.72	1.79	0.07
150	18.2	17	17.6	1.76	1.79	0.03
200	17.5	17.3	17.4	1.74	1.79	0.05

2) length of string,  $l = 70\text{cm}$

Mass of the bob in ( gm )	Time taken for 10 oscillation, t ( s )			Period of oscillation $T = t/10$	Theoretically calculated time period	difference
	$t_1$	$t_2$	Average ( t )			
50	16.4	17	16.7	1.67	1.68	0.03
100	16.3	16.5	16.4	1.64	1.68	0.04
150	16.5	17	16.7	1.67	1.68	0.01
200	16.8	17.3	17.05	1.70	1.68	0.02

3) length of string,  $l = 60\text{ cm}$



Mass of the bob in ( gm)	Time taken for 10 oscillation, t (s)			Period of oscillation $T = t/10$	Theoretically calculated time period	difference
	$t_1$	$t_2$	Average ( t)			
50	15.2	16	15.6	1.56	1.55	0.01
100	15.5	15.4	15.4	1.54	1.55	0.01
150	16	16	16	1.60	1.55	0.05
200	15.8	15.4	15.6	1.56	1.55	0.01

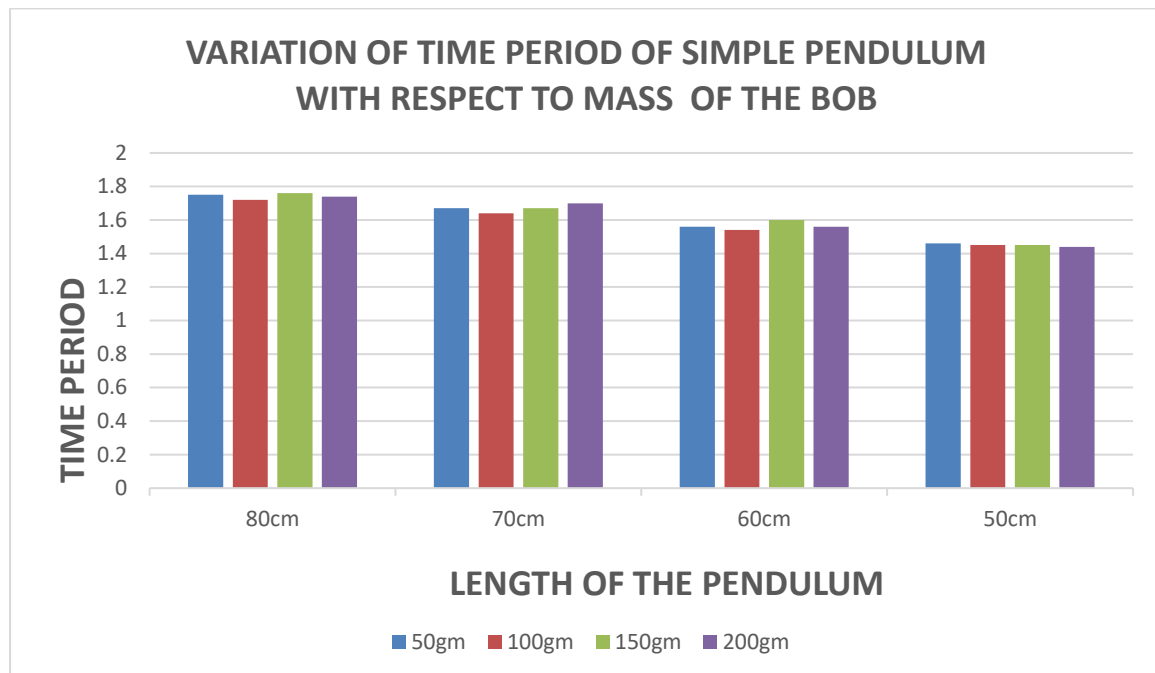
4) length of string  $l = 50$  cm

Mass of the bob in ( gm)	Time taken for 10 oscillation, t (s)			Period of oscillation $T = t/10$	Theoretically calculated time period	difference
	$t_1$	$t_2$	Average ( t)			
50	15	14.2	14.6	1.46	1.41	0.05
100	14.8	14.2	14.5	1.45	1.41	0.04
150	14.5	14.5	14.5	1.45	1.41	0.04
200	14.3	14.6	14.4	1.44	1.41	0.03

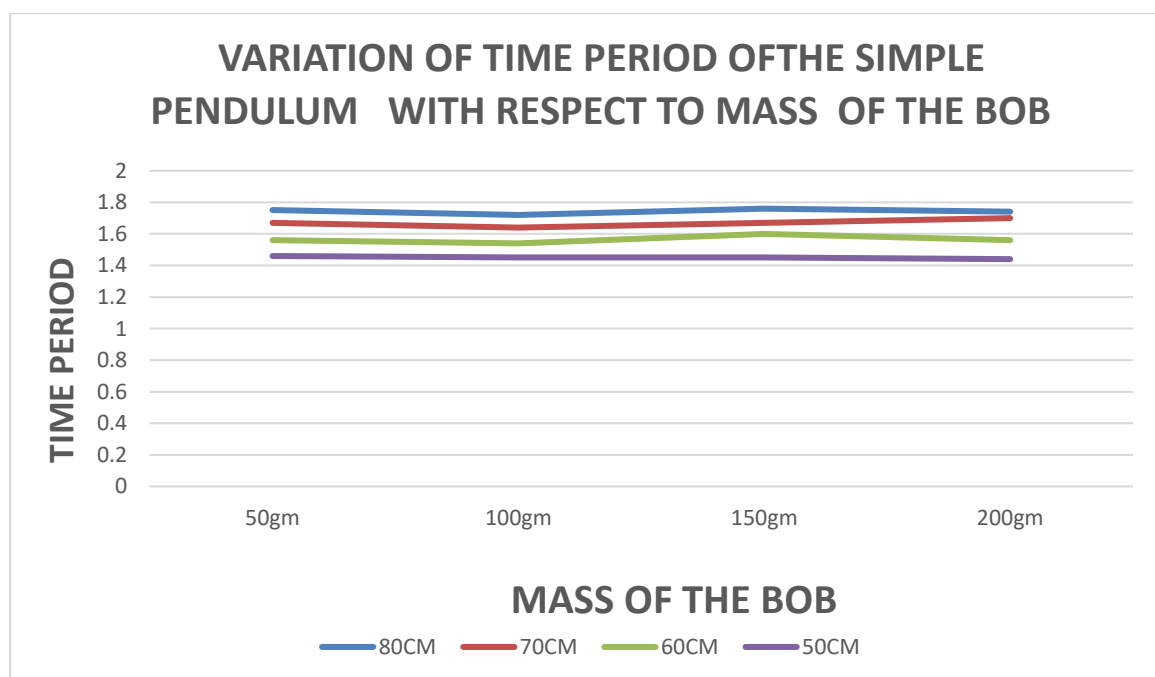


## FINDINGS:

### 1) Bar Graph



### 2) Line Graph



### CONCLUSIONS:

The variation in the time period of a simple pendulum on changing mass of the bob was studied

- From the observations and graphs it is clear that **“mas of the bob may not affect the time period of the simple pendulum”**
  
- **Errors in time period of a simple pendulum are occurred due to**
  - ✓ Damping due to friction at the point of suspension and also due to air currents
  - ✓ Time period changes from oscillation to oscillation
  - ✓ Errors may also have occurred due to the least count of the stopwatch, meter scale, non-spherical shape of the bob

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