

“Dissemination of Education for Knowledge, Science and Culture”
-Shikhanmaharshi Dr. Bapuji Salunkhe



(स्वायत्त) कोल्हापूर

VIVEKANAND COLLEGE, KOLHAPUR
(Empowered Autonomous)

DEPARTMENT OF STATISTICS

A PROJECT REPORT
On

**“STATISTICAL ANALYSIS OF MULTI-SPORTS IN
VIVEKANAND COLLEGE”**

Submitted by

Ms. Shivani Shivaji Ghatage

In partial fulfillment for the award of the degree of

BACHELOR OF SCIENCE

in

STATISTICS

2023-24

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Certificate

This is to Certify that,

Sr. No.	Name	Roll No.
1	Ms. Shivani Shivaji Ghatage	8307

Have satisfactorily completed the project work on "STATISTICAL ANALYSIS OF MULTI-SPORTS IN VIVEKANAND COLLEGE" as a part of skill enhancement course for B. Sc. III, prescribed by the Department of Statistics, *Vivekanand College, Kolhapur (Empowered Autonomous)* in the academic year 2023-24.

This project has been completed under our guidance and supervision. To the best of our knowledge and belief, the matter presented in this project report is original and has not been submitted elsewhere for any other purpose.


Project Guide

(Mrs. Shinde V. C.)


Examiner




Head

(Mrs. Shinde V. C.)
HEAD

DEPARTMENT OF STATISTICS
VIVEKANAND COLLEGE, KOLHAPUR
EMPOWERED AUTONOMOUS

DECLARATION

Respected madam,

I undersigned hereby declare that this project entitled “**STATISTICAL ANALYSIS OF MULTI-SPORTS IN VIVEKANAND COLLEGE**” is conducted under the guidance of **Mrs. Shinde V. C.** this is our original work. The empirical finding in the report is based on the work conducted by us personally & is not a reproduction of any source.

If our work is found to be copied, then we will be liable to be punished under the rule

DATE: -

PLACE: - KOLHAPUR

Ms. Ghatage Shivani Shivaji

Roll no. :- 8307

ACKNOWLEDGEMENT

A project submitted by **Shivani Ghatage** in partial fulfillment of degree leading to **T.Y.B.Sc. Department of Statistics** submitted to the Vivekanand college, Kolhapur (empowered-Autonomous)

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INTRODUCTION

Sport is commonly defined as such as an athletic activity that involves a degree of competition. Some games and many kinds of racing are called sports. A professional at a sport is called an athlete. Many people do sports with their friends. Games and sports are very similar, a game is a physical or mental activity or contest that has rules and that people do for pleasure. A sport is a contest or game in which people do certain physical activities according to a specific set of rules and compete against each other. The difference is subtle.

Now-a-days, games and sports are arising as a bright career for the youths in which many youths have not only made their career but also earned name and fame worldwide. Some of them are Saina Nehwal, Pulella Gopichand, P. V. Sindhu, Mary Kom, Ashwini Nachappa, P.T. Usha, Anju Bobby George, Milkha Singh, Sachin Tendulkar, Sania Mirza, etc. Playing indoor games improves the memory power and concentration level and outdoor games improves the physical and mental health. In order to get a sound mind in a sound body, we must involve in the sports activities regularly

We collect the data from Vivekanand college, Kolhapur (empowered-Autonomous) regarding the sports from 2021 to 2024. We get information about the players by their achievement and participation in game.

In both gender most of players play solo game and most of them from science stream as compare arts & commerce. The winning percentage of medals is more in male players as compare female players. Participation of players at university level is much more than international and national. There are few players who participated in international level.

OBJECTIVES

- 1) To analyze the distribution of games by type (e.g. solo & team).
- 2) To check the men's and women's medal count
- 3) To identify the distribution of players (male & female) in streams.
- 4) To check the performance of the player in games (e.g. solo & team).
- 5) To determine the level of game played by the player.

COLLECTION OF DATA

For this project we collect the secondary data from Vivekanand college, Kolhapur (Empowered Autonomous) regarding sports using check sheet method.

We collected 183 players data for project and in that, there are 106 are girls and 77 are boys.

We divided this data into two groups namely senior & junior with their achievements. We have also collected the information of players with their Age, stream, game, Gender, and their level of game for study the relationship between games and players.

STATISTICAL TOOLS USED FOR ANALYSIS

Diagrammatic representation of data: -

- **Bar graph**
- **Pie chart**
- **3-D Pie Chart**
- **Sunburst**

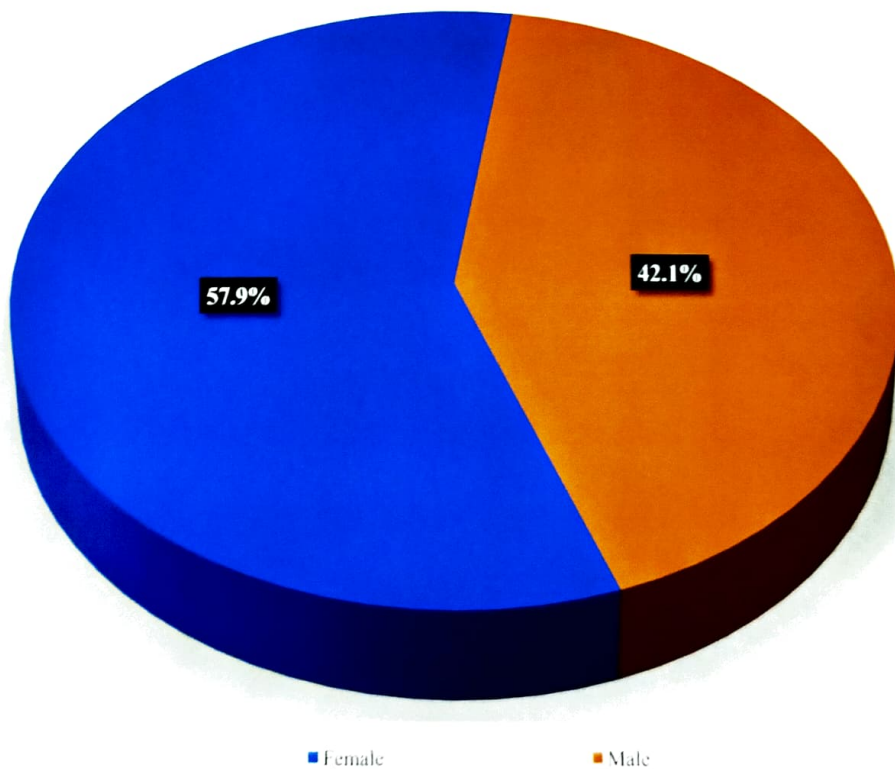
Software used: -

- **Microsoft Excel**
- **Microsoft Word**

DEMOGRAPHIC PROFILE OF PLAYERS

❖ Gender-wise Distribution: -

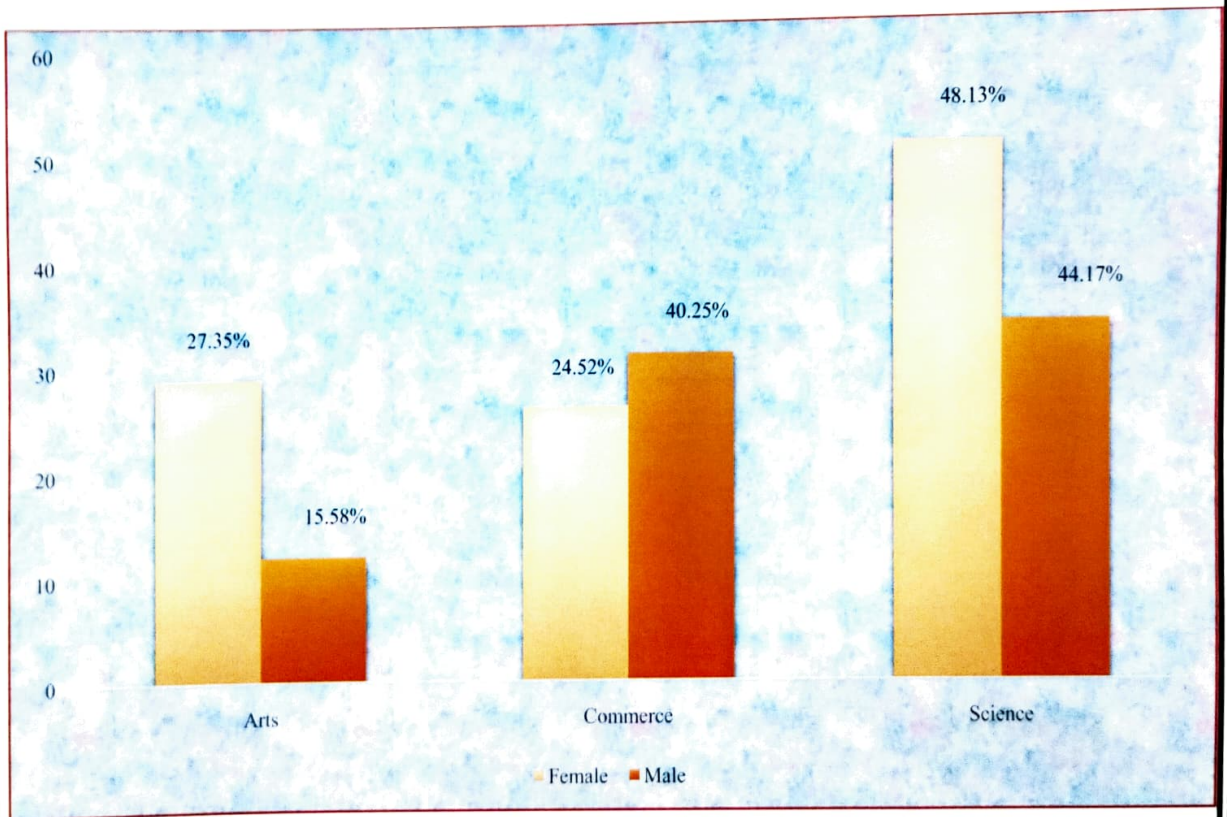
Gender	Frequency	Percentage
Female	106	57.90%
Male	77	42.10%



A total of 183 players were involved, out of this, females took the greater percentage of 57.9% and the remaining 42.1% went for the males.

❖ Stream wise Distribution: -

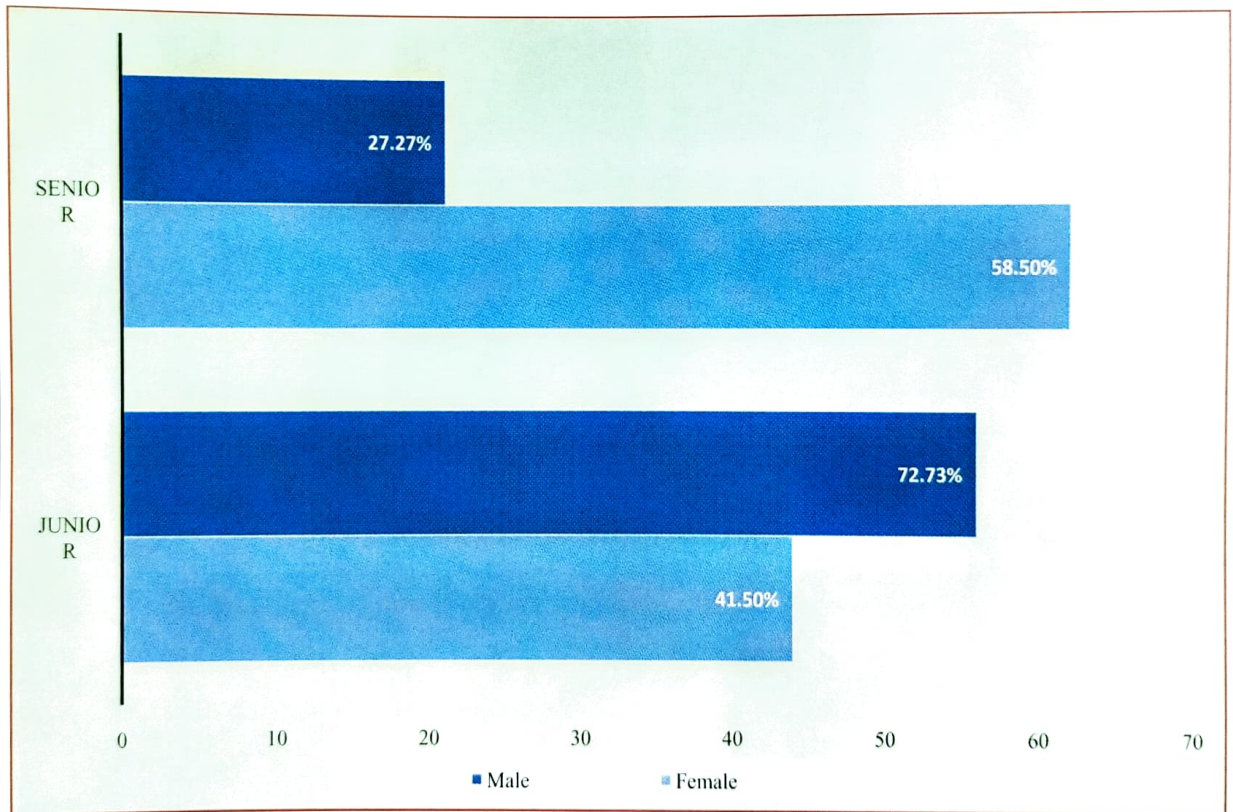
Stream	Female	Male	Total
Arts	29	12	41
Commerce	26	31	57
Science	51	34	85
Total	106	77	183



According to table the highest percentage of players in male & female were from the science and commerce background as compared to the arts.

❖ Division wise distribution: -

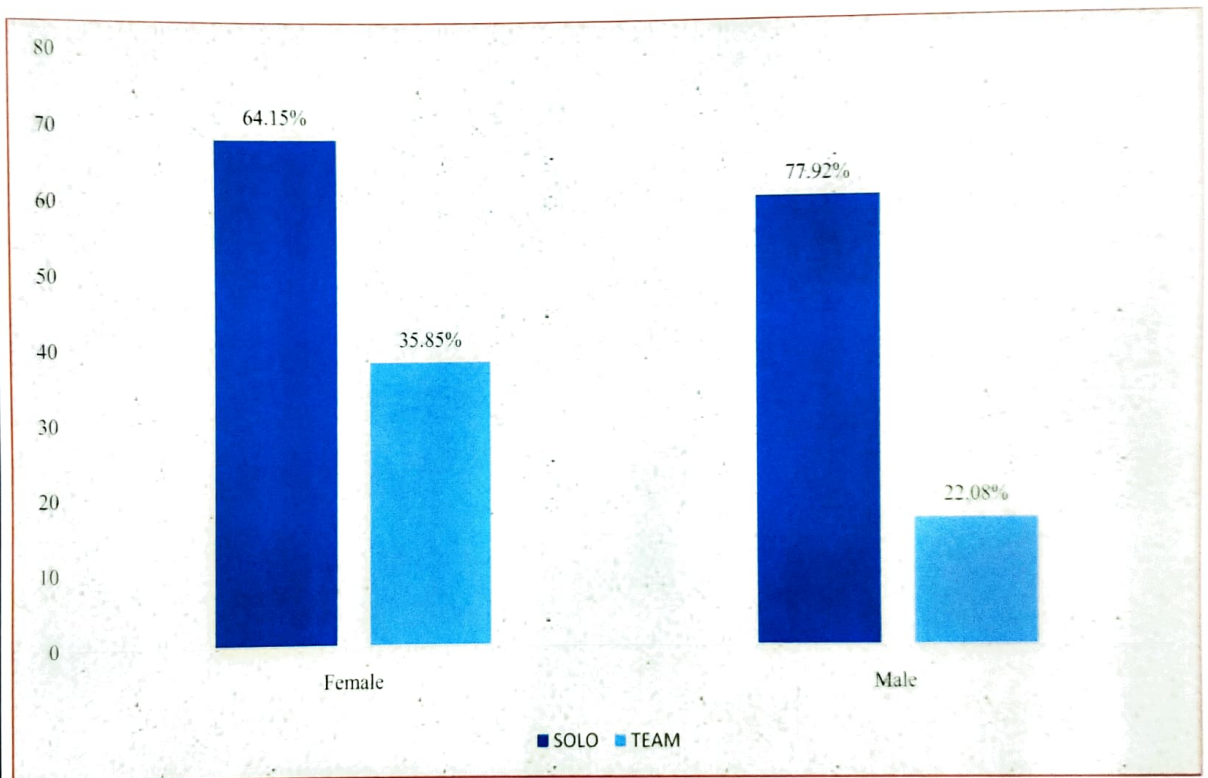
Division	Female	Male	Total
Junior	44	56	100
Senior	62	21	83
Total	106	77	183



In given diagram we can see in junior division most of male players are there and in senior division most of female's player are there.

❖ Gender wise distribution in game (solo & team): -

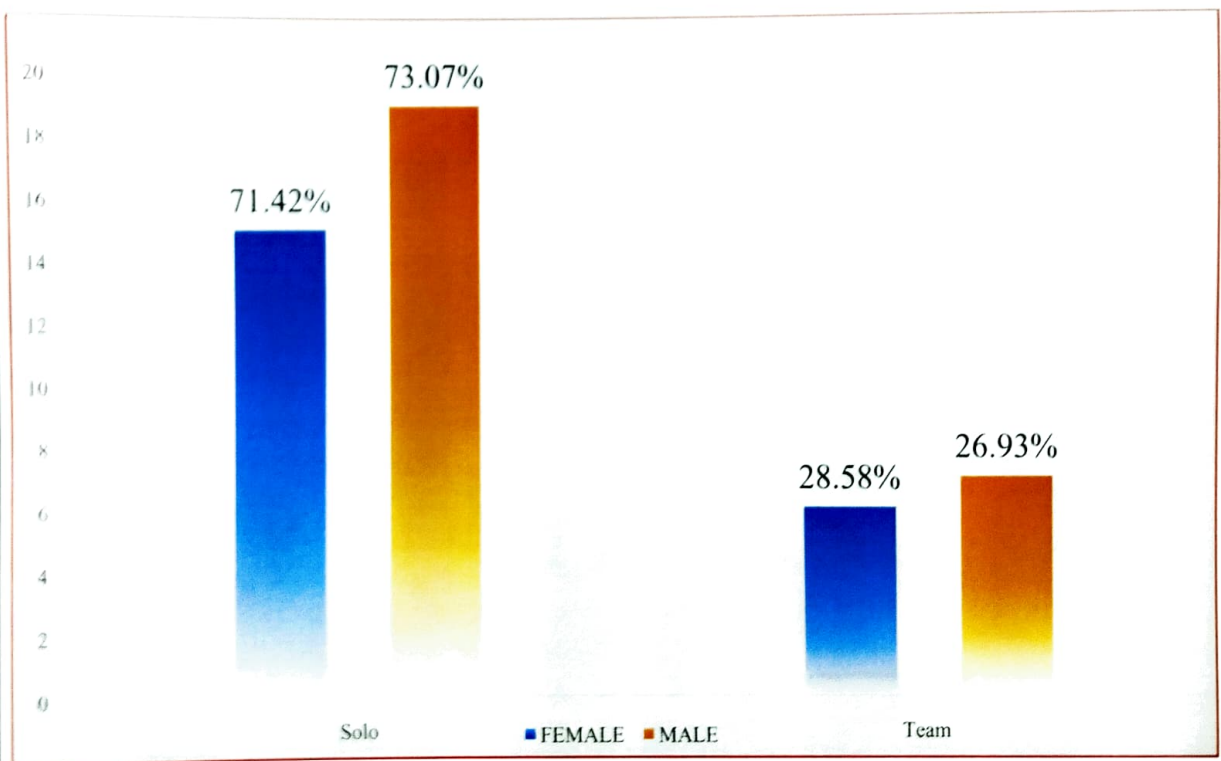
Games	Female	Male	Total
Solo	68	60	128
Team	38	17	55
Total	106	77	183



In both male and female, most of are interested in solo game as compare team game.

❖ Game wise distribution in medals: -

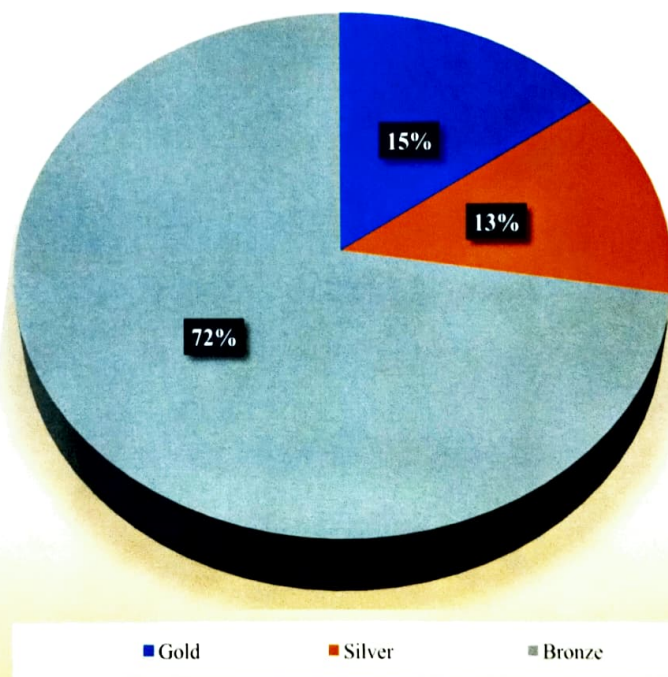
Gender	Solo	Team	Medals
Female	15	6	21
Male	19	7	26
Total	34	13	47



Most of medals won in solo games by both players males & females.

❖ Distribution of Medals: -

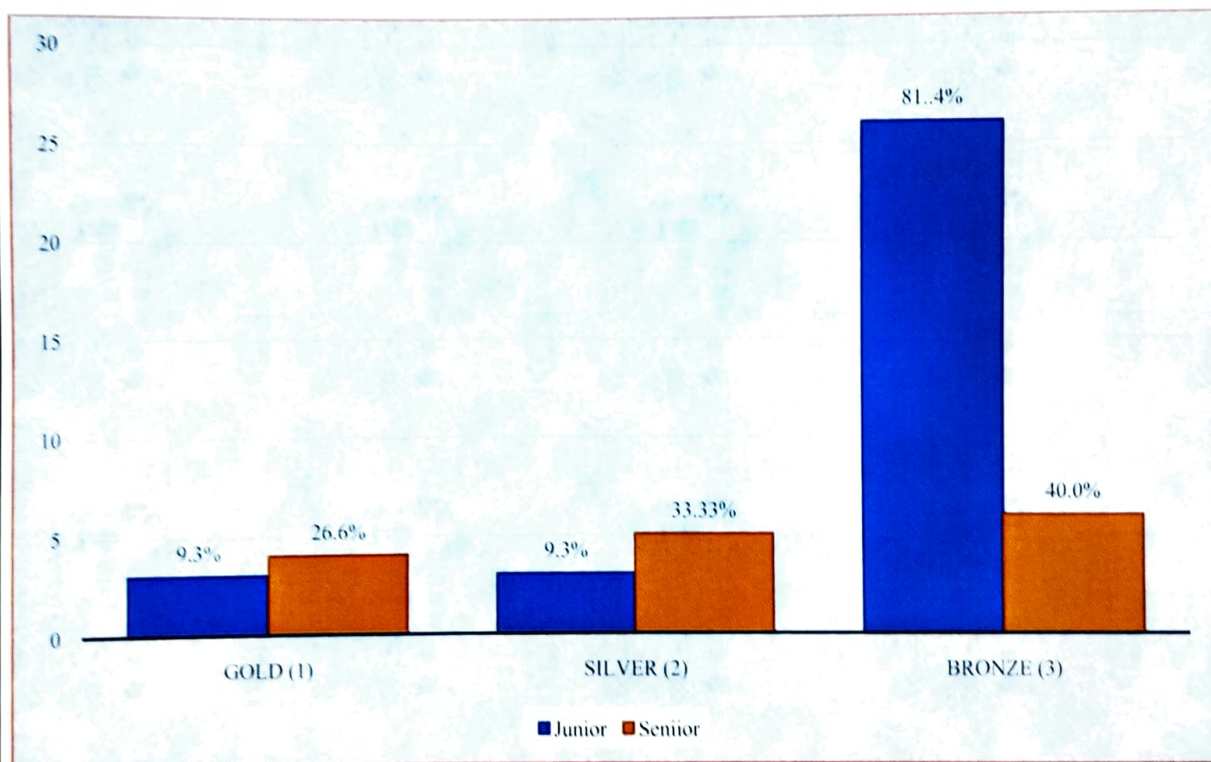
Medals	Females	Males	Total
Gold	3	4	7
Silver	5	3	8
Bronze	13	19	32
Total	21	26	47



Most of players (male & female) won bronze medal as compare gold & silver.

❖ Junior and Senior student's wise medal distribution: -

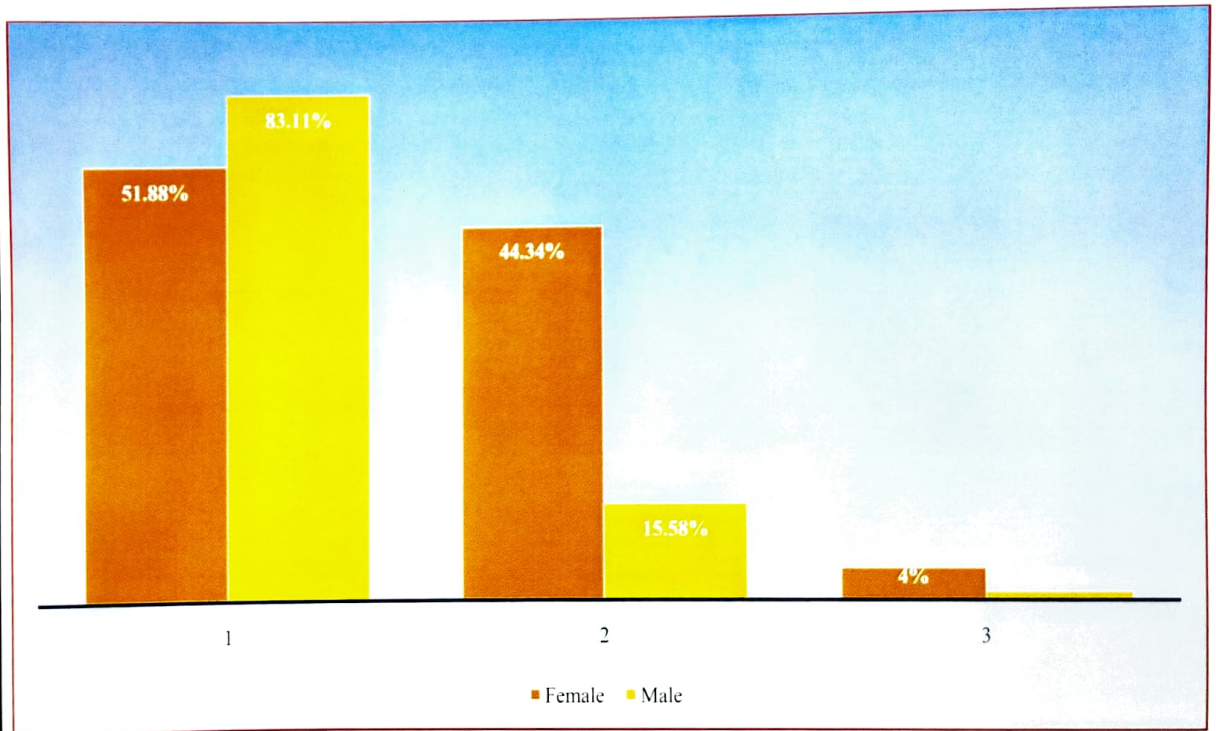
Gender	Gold (1)	Silver (2)	Bronze (3)	Total
Junior	3	3	26	32
Senior	4	5	6	15
Total	7	8	32	47



According to the table in all medals (gold , silver , bronze) , Junior division get more medal than senior division.

❖ Level wise Distribution: -

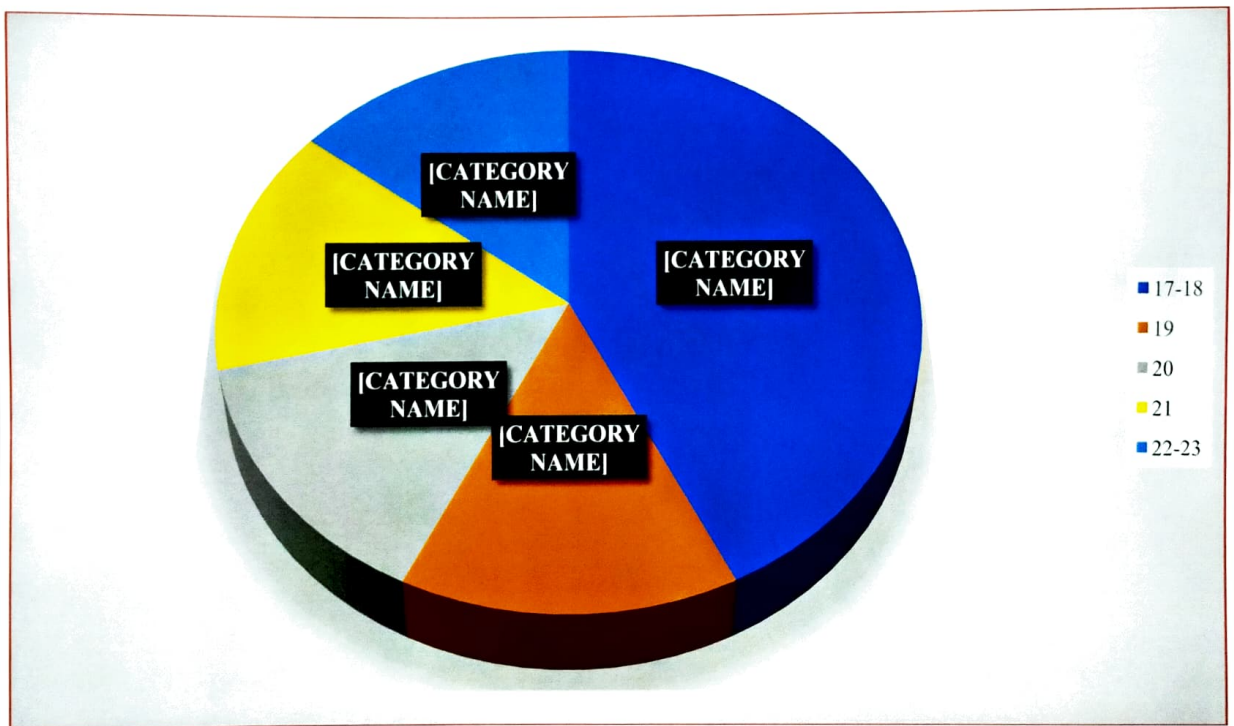
Level	Female	Male	Total
University (1)	55	64	119
National (2)	47	12	59
International (3)	4	1	5
Total	106	77	183



It is found that from the table, most of players are played university level game as compare national and international

❖ Age wise distribution: -

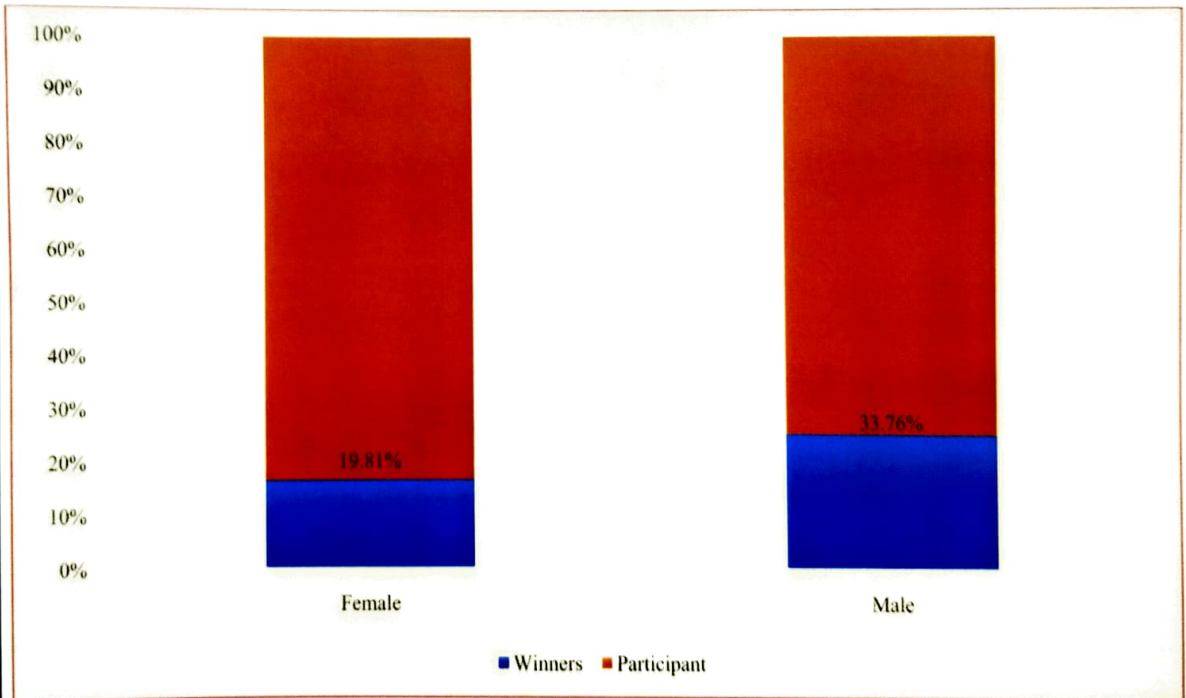
Medals	17-18	19	20	21	22-23	Total
Gold	3	1	1	1	1	7
Silver	3	1	1	1	2	8
Bronze	26	1	1	2	2	32
Total	32	3	3	4	5	47



It is found that the junior student achievement is greater than senior students.

❖ Gender wise winning percentage Graph: -

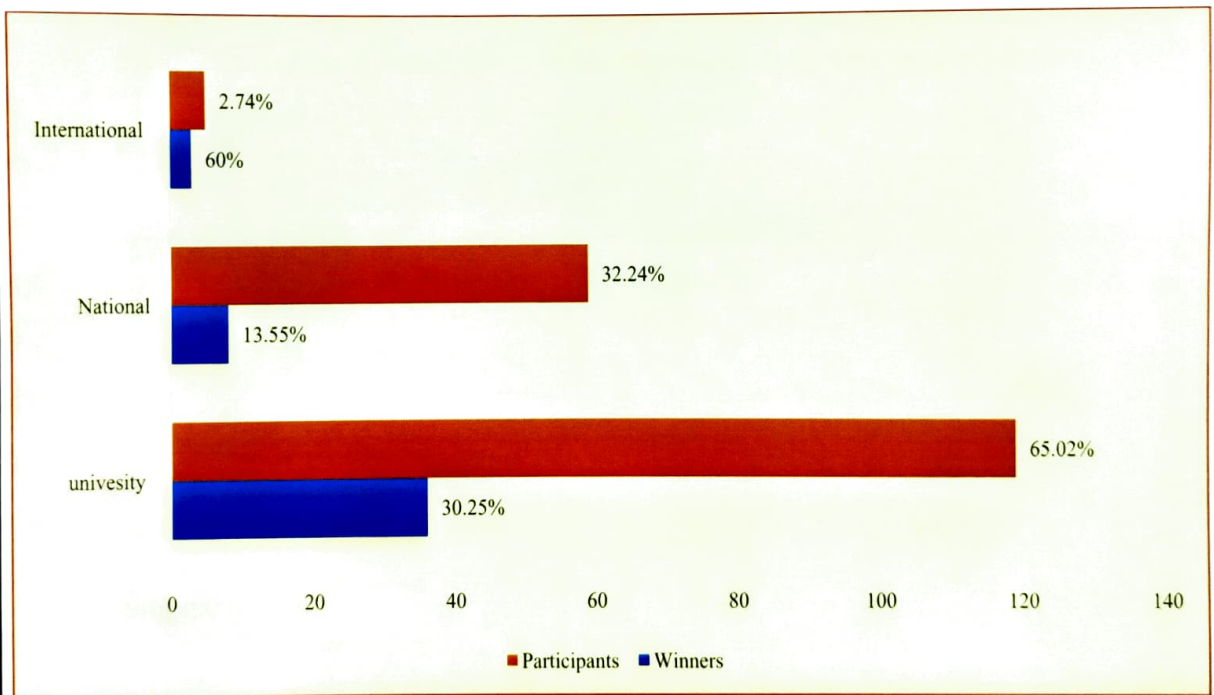
Gender	Level			Total	Participant
	University	National	International		
Female	13	6	2	21	106
Male	23	2	1	26	77
Total	36	8	3	47	183



There is highest winning percentage are in males particularly at university level and highest participation in a female.

❖ Level wise winning percentage graph: -

Level	medals		Total	Participant
	Female	Male		
university	13	23	36	119
National	6	2	8	59
International	2	1	3	5
Total	21	26	47	183



Most of players participated in university level games and high percentage of getting medals in a international level games.

STATISTICAL ANALYSIS OF DATA

❖ To test equality between male and female.

Hypothesis:

P_1 : winning proportion of male players

P_2 : winning proportion of female players

Test statistics:

$H_0: P_1 = P_2$, i.e. winning proportion of male and female players are same.

$H_1: P_1 > P_2$, i.e. winning proportion of male players is more than female players.

Formula: -

$$\text{i. } Z = \frac{P_1 - P_2}{\sqrt{pq\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$\text{ii. } P_1 = X_1/n_1$$

calculation:

$$Z_{\text{calculated}} = 2.129292$$

$$Z_{\text{tabulated}} = 1.64485$$

$$Z_{\text{calculated}} > Z_{\text{tabulated}}$$

So calculated value is greater than tabulated value at 5% level of significance then the winning proportion of medals in male players is larger than female players.

OVERALL CONCLUSION

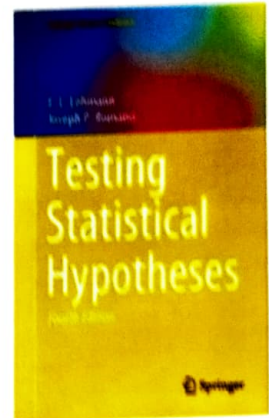
- ❖ In all games participation of female players are more than male players but, the winning proportion of medals in male players is larger than female players.
- ❖ Most number of players are from science stream.
- ❖ In overall, players are interested in solo games as compare to team game.
- ❖ We see that most of players are from junior division and also winning percentage is large than senior division.
- ❖ As we know the competition of games level by level become hard and by this, we can see here no. of players participation as level wise becoming decrease.

REFERENCE

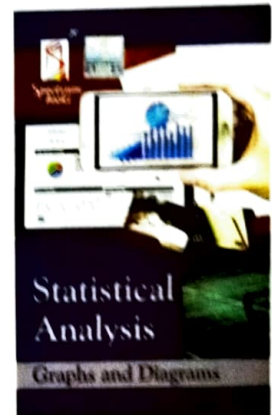
Books:

1) Testing of Statistical Hypotheses

- E. L. Lehmann
- Joseph P. Romano



2) Statistical Analysis: Graphs and Diagrams
-SPECTRUM Books PVT. LTD.



Wikipedia: -

[9.4 - Comparing Two Proportions | STAT 415 \(psu.edu\)](#)