

PROJECT REPORT
ON
“IMPACT OF DAILY UP-DOWN ON EDUCATIONAL AND HEALTH STATUS OF STUDENTS”

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Certificate

This is to certify that, Pooja Patil, Pratiksha Patil, Rupali Patil, Mayur Patil, Amar Chaudhari has completed their project work entitled “Impact of daily up-down on Educational and health status of students” under the guidance of Ms. Y. S. Wagh at the Department of Statistics, Moolji Jaitha College, Jalgaon in the year 2017-2018. The present work is not previously formed award of any degree or diploma or other similar titles of this or any other university or examining body.

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Introduction

Now a day in rural areas the academic or professional education is not available. Therefore, students are use the bus, train or various private vehicles for the daily up-down to reach to the college. Some students have not good economical condition or family background then they are preferred to daily up-down to travel from village to college.

Some students has very close to their family then they are not like to stay on room or hostel then there are prefer daily up-down if possible during the daily up-down some times bus or train is late or not clean due to that reason they facing some physical problem like headache, body pain dust allergy and any other. Also they face some mental problem like stress, lack of confidence, lack of concentration etc.

Due to various reasons negative impact are on the result and health status of the students. Therefore, we decided to focus this topic for our project. With this initiative we collect the data of daily up- down students in M. J. College who are travelling from Villages to colleges.

Target Population

The F.Y, S.Y, T.Y B.sc students who are doing daily up-down are selected for our study. There are total 190 students interviewed out of which 95 are girls and 95 are boy's students. We form a questionnaire which is given below the section of methodology.

Objectives

- ❖ To study the problems faced by student during up-down.
- ❖ To create the awareness about the problems of students in the society.
- ❖ To find the reasons behind their up-down.
- ❖ To study factors affecting on their educational and health status of the students.
- ❖ To analysis their problem by using some statistical techniques.

Methodology

- ❖ It is the study of directed towards determining the impact of daily up-down on to educational and health status of students.
- ❖ The data are collected from sample survey aided by structured questionnaire. The respondent have been chosen from all B.sc student which doing daily up-down, from M. J. College, Jalgaon.
- ❖ We have graphically explored the data of daily up-down through the graphs like pie chart, bar diagram, multiple bar diagram, subdivided bar diagram.
- ❖ We have analyzed our data using test for single population mean, test for equality of two population means, test for single population proportion, test for the difference between two population proportions etc.

Questionnaire:

Department of statistics

M J College jalgaon

Title: Impact of daily up-down on to educational and health status of students

Name: _____

Gender: Male ☐ Female ☐ parents occupation: _____

Department: _____ Class: _____ Roll No: _____

1) Do you like to daily up-down from your village or city to college?

a) Yes ☐ b) No ☐

2) How many years you are having daily up-down?

a) 1year ☐ b) 2year ☐ c) 3year ☐ d) more than 3years ☐

3) Which vehicle do you use for up-down?

a) Bus ☐ b) train ☐ c) bike ☐ d) any other ☐

4) How much time do you need to go from your college to your village?

a) less than 1hour ☐ b) 1hour ☐ c) 2hour ☐ d) more than 2hour ☐

5) How much fare do you require for up-down per month?

a) 100-300Rs. ☐ b) 300-600Rs. ☐ c) 600-900Rs. ☐ d) 900-1200Rs ☐

6) What is the reason for up-down?

a) Economic condition ☐ b) Family problem ☐ Physical problem ☐ any other ☐

7) How frequently the bus or trains are arrives?

a) after 30min ☐ b) after 1hr ☐ c) after 2hrs ☐ d) more than 2hrs ☐

8) Whether the bus or train is cleaned?

a) Yes ☐ b) No ☐

9) Which type of problem you are face during up-down?

a) Physical problem ☐ b) mentally retardation ☐ c) both a) & b) ☐

d) any oher ☐

10) While in daily up-down do you feel tired?

a) yes ☐ b) no ☐

11) Is there any effect on your health due to daily up-down?

a) Yes ☐ b) No ☐

12) If yes, then which type of physical problem are you facing?

a) headache ☐ b) body pain ☐ c) dust allergy ☐ d) any other ☐

13) Which type of mentally problem are you facing?

a) Stress ☐ b) lack of confidence ☐ c) lack of concentration ☐ d) any other ☐

14) What is the attitude of the society towards you while you daily up-down?

a) good ☐ b) bad ☐

15) If social attitude is bad, do you feel mentally harassed?

a) yes ☐ b) no ☐

16) You feel secure surrounding during daily up-down?

a) yes ☐ b) no ☐

17) After coming back to home do you feel like to study?

a) yes ☐ b) no ☐

18) What is the effect of daily up-down on your result?

a) Positive ☐ b) negative ☐

19) Your result in last 3years? **(CGPA / % of marks)**

i) First year:

ii) Second year:

iii) Third year:

20) In bus or train, while in daily up-down do the staff members will cooperate with you?

a) yes ☐ b) no ☐

21) In case of Unavailability of bus or train, do you complaint about it?

a) yes ☐ b) no ☐

22) If yes, does the investigation happen?

a) yes ☐ b) no ☐

23) While in daily up-down do the teachers or college staff cooperate with you?

a) yes ☐ b) no ☐

24) Due to daily up-down does it decrease your participation in other curricular activities in college?

a) yes ☐ b) no ☐

25) While in daily up-down which source you use for the entertainment?

a) Listening music ☐ b) use of internet ☐ c) chat with friends ☐ any other ☐

26) How you feel during the journey?

a) Boring ☐ b) joyful ☐ c) insecure ☐ d) tired ☐

27) Do you get enough time to mix with your family and friends ?

a) yes ☐ b) no ☐

28) How many time daily you talk with your family?

a) 1 hour ☐ b) 2 hour ☐ c) 3 hour ☐ d) more than 3 ☐

29) Do you get enough time to rest ?

a) Yes ☐ b) no ☐

Graphical Techniques

1) Pie Chart:

A pie chart is a circular statistical graphic which is divided into slices to illustrate numerical proportion. A pie chart displays data, information, and statistics in an easy-to-read, pie slice format with the varying slice sizes telling you how much of one data element exists. The bigger the slice, the more of that particular data was gathered.

➤ Use of pie chart:

The main use of a pie chart is to show that comparison when items are presented on a pie chart you can easily see which item is the most popular and which is the least popular. Pie charts can be used to show the success or failure of certain products or services. They can also be used to show the market reach of a business.

1) Simple bar diagram:

It is the simplest of the bar diagrams and is most frequently used. It is used for comparison of two or more items or values of a single variable.

2) Multiple bar diagram:

A multiple bar diagram shows two or more sets of inter-related data represented. The method can be used for data which is made up of two or more components. In this method, the components are shown at separate adjoining bars. The heights of each bar represent the actual

values of the components are shown by the different shades or colors.

Multiple bar is a graph with rectangular bars. Each bars length or height is proportional to the bars represented values. In other words, the length or height of the bar is equal to the quantity.

The graph usually shows a comparison between different categories. Although the graph can technically be plotted vertically or horizontally the most usual presentation for a bar graph is vertical. The x-axis represents the categories. The y-axis represents a value for those categories. In the graph below the value are percentages.

3) Sub-divided bar diagram:

These diagrams are use if the total magnitude of the given variable is to be divided into various parts of sub class or components.

Different shades or colors, crossing, dotting or design are used to distinguish the various components. To facilitate comparisons the order of various components should be same. It is customary to show the largest components at the base of the bar and smallest components at the top so that the various components appear in the order of their magnitude.

SUMMRISED DATA

The following data gives information about the daily up-down students.

Q.No		Male	Female	Total
1	Students like to daily up-down	73	45	118
2	How many years having to daily up-down.			
	a)1 year	18	33	51
	b)2year	25	18	43
	c)3 year	27	17	44
	d)more than 3years	25	28	53
3	Vehicle prefer for daily up-down	77	78	155
4	How much time do the students need to travel?			
	a)less than 1 hour	18	34	52
	b)1 hour	38	40	78
	c)2 hour	29	16	45
	d)more than 2	10	6	16
5	How much fare do they require for daily up-down per month			
	a)100 to 300	10	24	34
	b)300 to 600	31	26	57
	c)600 to 900	23	22	45
	d)900 to 1200	31	25	56
6	What is the reason behind their daily up-down			
	a)economic condition	39	23	62
	b)family problem	19	25	44
	c)physical problem	1	3	4
	d)any other	37	46	83
7	How frequently the bus or train are			

	arrives			
	a)after 30 minute	37	44	81
	b)after 1 hour	35	37	72
	c)after 2 hour	10	6	16
	d)more than 2 hour	11	9	20
8	Whether the bus or train is clean	35	33	68
9	Which type of problem students face during the up-down			
	a)physical problem	17	8	25
	b)mentally problem	14	15	29
	c)both a and b	43	50	93
	d)any other	21	22	43
10	In daily up-down students fill tired	82	90	172
11	Is there any effect on their health during the up-down	69	77	146
12	If yes, then which type of physical problem are you facing			
	a)headache	30	54	84
	b)body pain	41	32	73
	c)dust allergy	14	13	27
	d) any other	27	17	44
13	Which type of mentally problems students are faced			
	a)stress	50	71	121
	b)lack of confidence	6	6	12
	c)lack of concentration	22	14	36
	d)any other	21	9	30
14	What is the approach of society toward them while in daily up-down	72	60	132

15	If social attitude is negative, do they feel mentally harassed	18	25	43
16	Students feel secure surrounding during daily up-down	68	55	123
17	After coming back to home the students feel like to study	29	16	45
18	What is the effect of daily up-down on their result	43	37	80
20	In bus or train, while in daily up-down staff members will co-operate with them	74	57	131
21	In case of unavailability of bus or train, do they complaint about it	52	57	109
22	If yes, does the investigation happened	28	23	51
23	The teachers or collage staff co-operate with them	71	73	144
24	It is decreases students participation in other curricular activities in collage	65	52	117
25	Which source they are use for the entertainment			
	a)listening music	57	62	119
	b)use of entertainment	29	7	36
	c)chat with friend	25	15	40

	d)any other	23	21	44
26	How they feel during the journey			
	a)boring	25	28	53
	b)joyful	45	25	70
	c)insecure	5	6	11
	d)tired	22	39	61
27	Do the students get enough to mix with family and friends	55	43	98
28	How many time they talk with their family			
	a)1 hour	19	26	45
	b)2hour	24	15	39
	c)3hour	20	20	40
	d)more than 3hour	32	35	67
29	Do they get enough time to rest	53	39	92

Graphical Representation of Data

The following charts are graphical representation of above data.

Q.3)

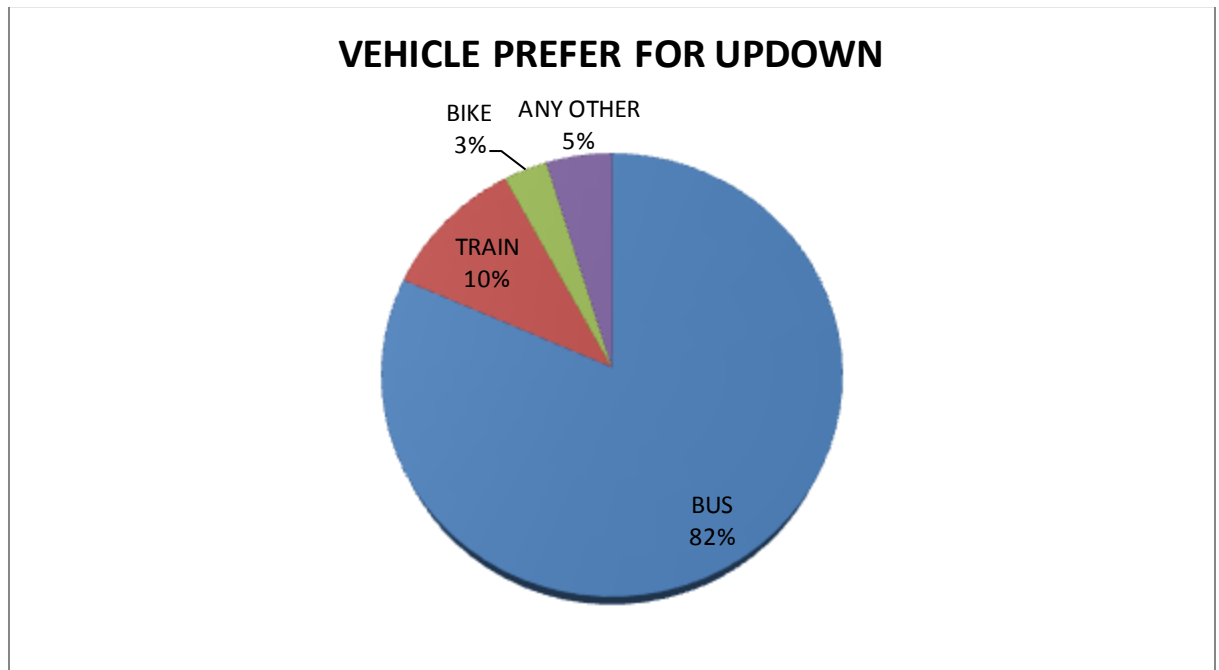


Fig: Here we conclude that most of the students i.e. 82% are prefer bus for up-down and remaining 10% use train, 5% use any other transportation and only 3% use bike for their daily up-down.

Q.12)

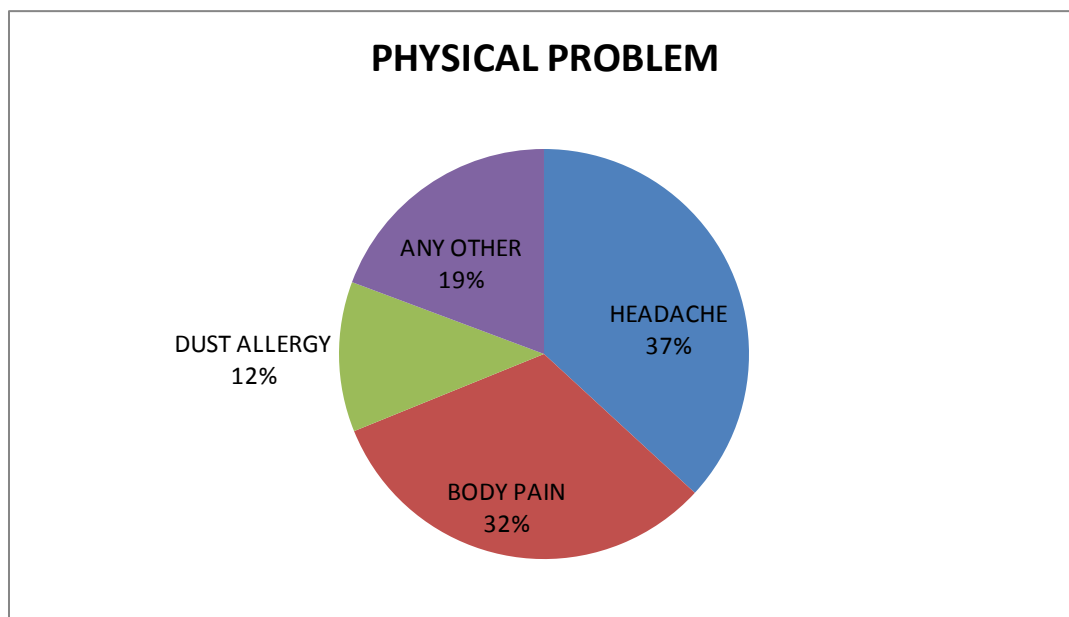


Fig: From above figure, we observe that 37% student are suffered from the headache, 32% body pain, 12% dust allergy and remaining 19% any other problems.

Q.13)

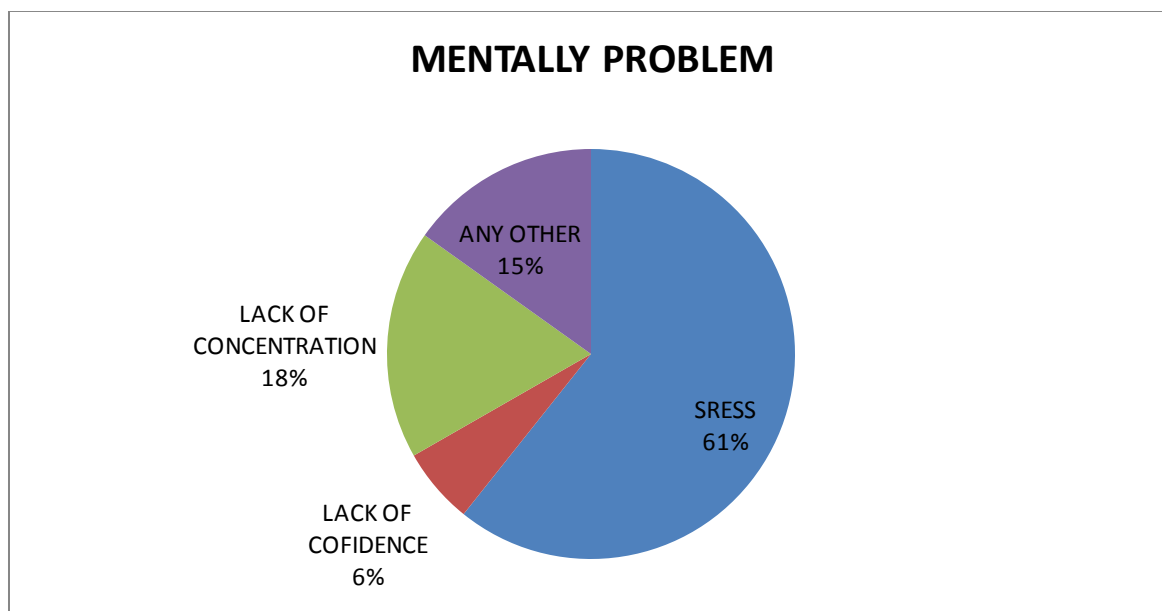


Fig: Here we observe that are 61% students suffered from stress, 18% lack of concentration, 6% lack of confidence, and remaining 15% any other problem.

Q.25)

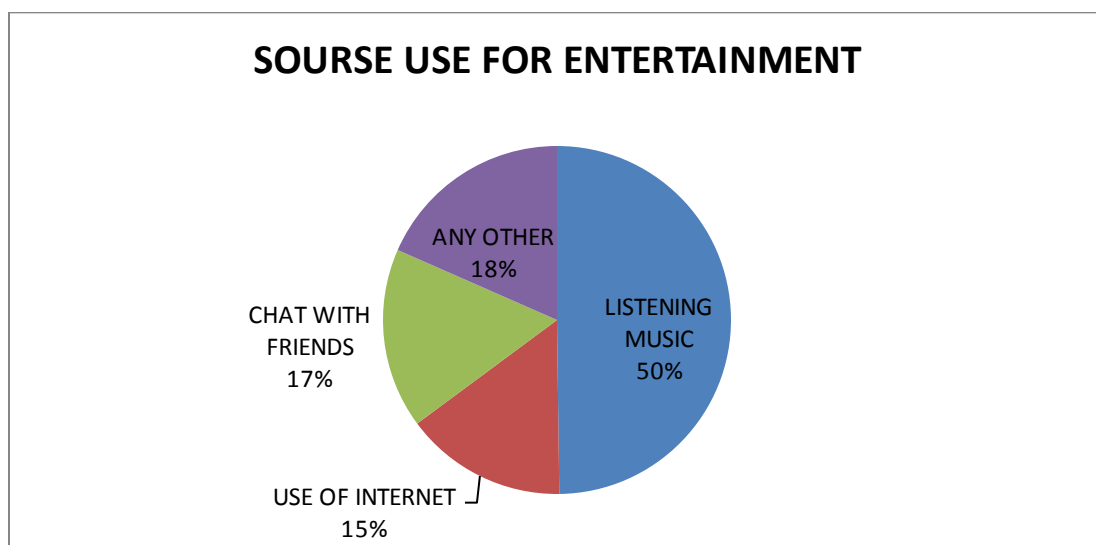


Fig: From above we observe that 50% students choose listening music, 15% use the internet, 17% chat with friend, and remaining 18% use any other source of entertainment during their journey.

Q.26)

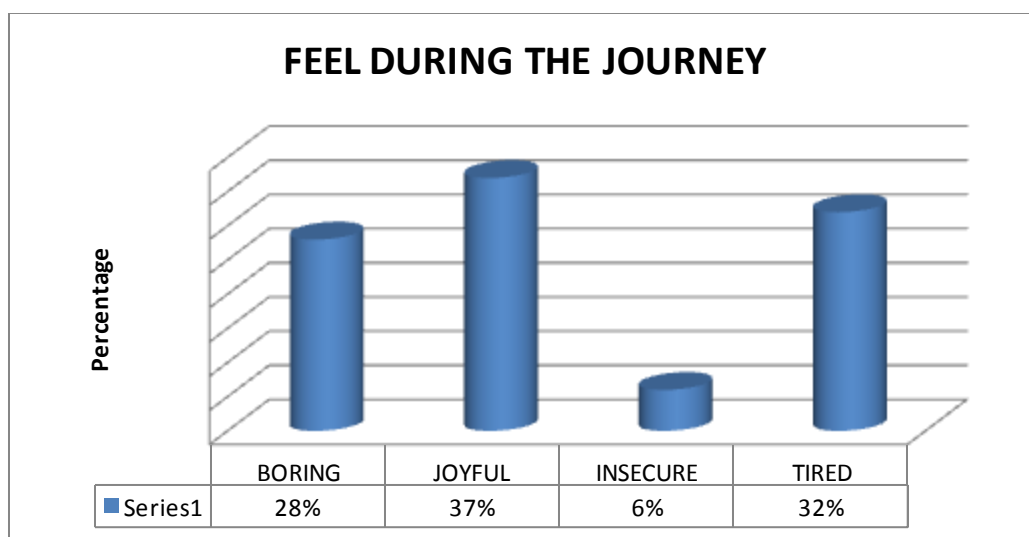


Fig: Here we observe that 28% students feels boring, 37% joyful, 6% insecure, and 32% students are feeling tired during the journey.

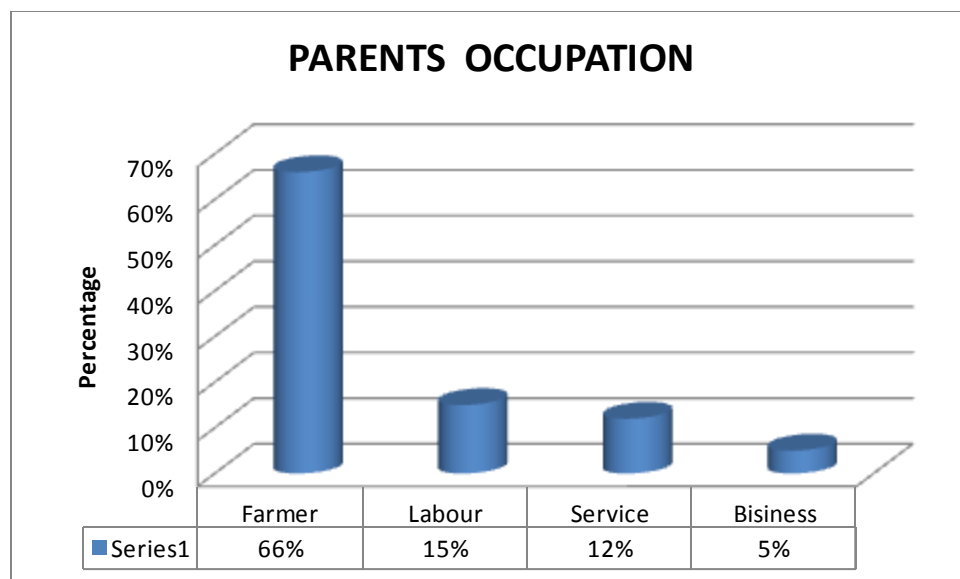


Fig: Most of the 66% student's parent occupation is farming and 15% labor Remaining 12% service and 5% business mans.

Q.9)

Problems	Male	Female
Physical problem	18%	4%
Mentally problem	15%	16%
both	45%	53%
any other	22%	24%

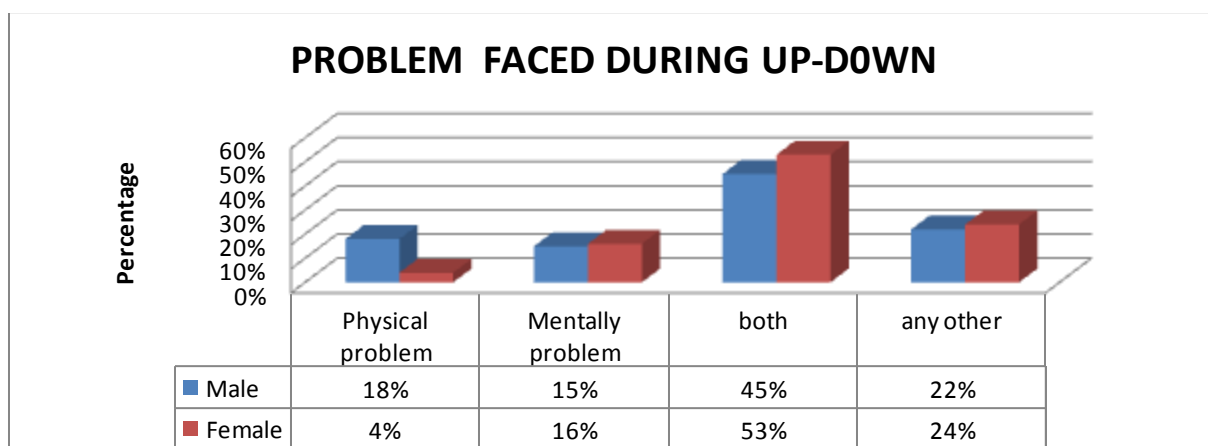


Fig: 18% male and only 4% female face physical problem, 15% male and 16% female face mentally problem, 45% male and 53% female face both mental And physical problem and 22% male 24% female face any other problem during their daily up-down.

Q.12)

Physical Problems	Male	Female
Headache	32%	57%
Body pain	43%	34%
Dust allergy	15%	14%
Any other	28%	18%

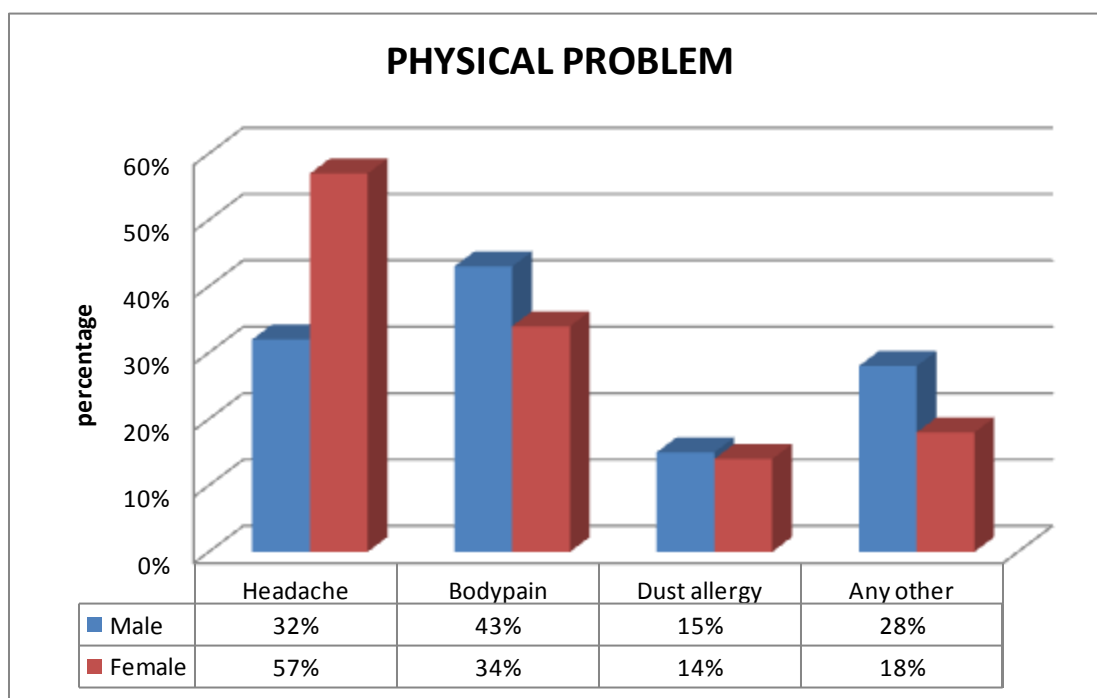


Fig: Most of the 57% female and 32% male has headache problem, 43% male and 34% female has body pain. Only 15% male and 14% female has dust allergy, 28% male and 18% female face any other physical problem during their daily up-down.

Q.13)

Mental Problems	Male	Female
Stress	53%	75%
Lack of confidence	6%	6%
Lack of concentration	23%	15%
Any other	22%	10%

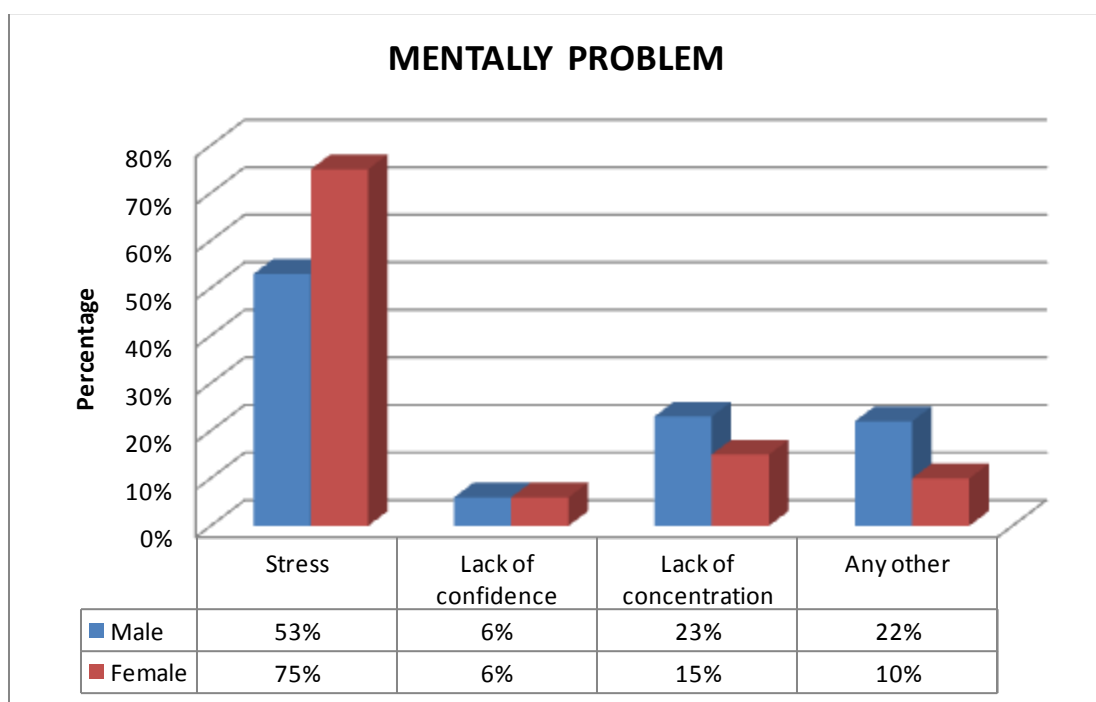


Fig: Most of the 53% male and 75% female suffering from stress only 6% male and female has lack of confidence, 23% male and 15% female have lack of concentration. 22% male and 10% female suffered from any other mentally problem during their daily up-down.

Q.26)

Feel during Journey	Male	Female
Boring	26%	26%
Joyful	48%	6%
Insecure	5%	41%
Tired	23%	45%

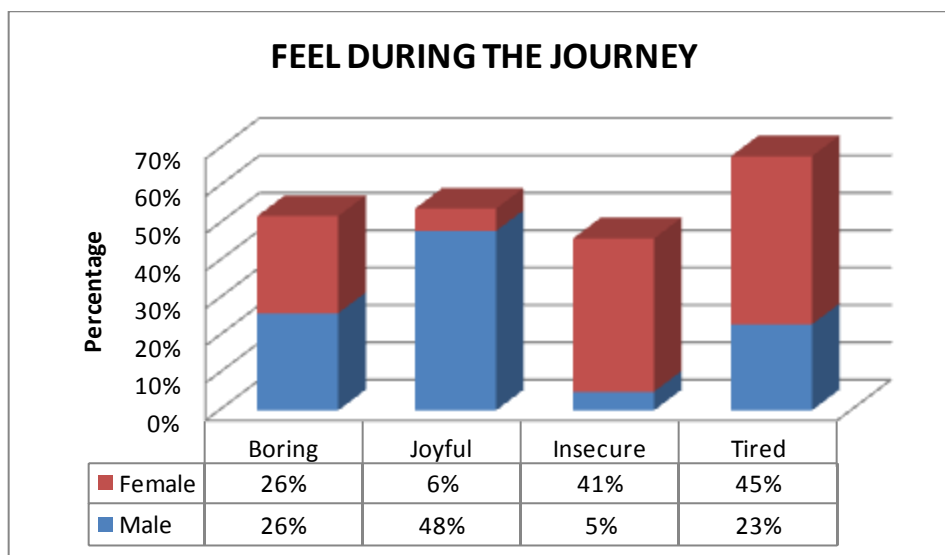


Fig: 26% male and female feel boring, 48% male and only 6% female feel joyful, 5% Male and 41% female feeling insecure and 23% male and 45% female feel tired during their journey.

Analysis Technique

- 1) The test statistics for testing the difference in two population proportions that is for testing the null hypothesis**

Ho: $p_1 = p_2$ VS H2: $p_1 \neq p_2$

Is

$$Z = \frac{(p_1 - p_2) - 0}{\sqrt{P * Q \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$P = \frac{n_1 * p_1 + n_2 * p_2}{n_1 + n_2}; \quad Q = 1 - P$$

The proportion of “success” in two sample combined. A survey conducted in two distinct populations will produce different result. It is often necessary to compare survey response population between the two populations.

p_1 = Population of the 1st sample with the characteristic of interest

p_2 = Population of the 2nd sample with the characteristic of interest

P = Population of the combination of sample with the characteristic of interest.

- 2) The test statistics for testing the single population proportions that is for testing the null hypothesis**

Ho: $p = p_0$ VS H1: $p \neq p_0$

Is,

$$Z = \frac{(p - P_0)}{\sqrt{P_0 * Q_0 / n}}$$

Where,

P=Population proportion of certain type of item in the population

n=Sample size

p=proportion of sample of certain type in a sample $p=x/n$

P0=specified value of P

3) The test statistics for testing equality of two population mean that is for testing the null hypothesis

$H_0: \mu_1 = \mu_2$ VS $H_1: \mu_1 \neq \mu_2$

Is,

$$z = \frac{\bar{x} - \bar{y}}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

Where,

\bar{x} = Mean of the 1st sample

\bar{y} =Mean of 2nd sample

σ_1 = Standard deviation of 1st sample

σ_2 = Standard deviation of 2nd sample

n_1 = 1st sample size

n_2 = 2nd sample size

4) The test statistics for testing single mean of population that is for testing the null hypothesis.

$H_0: \mu_1 = \mu_0$ VS $H_1: \mu_1 \neq \mu_0$ Is,

$$Z = \frac{\bar{x} - \mu}{\sigma / \sqrt{n}}$$

Where,

\bar{x} =Fix mean , μ =Sample mean and σ =Sample standard deviation

DATA ANALYSIS

Q.1)

Two Proportion test

P_1 = Proportion of boys student like to daily up-down.

P_2 = Proportion of girls student like to daily up-down.

H_0 : Proportion of girls & boys like to daily up-down are same.

H_1 : Proportion of girls & boys like to daily up-down are not same

$H_0: p_1 = p_2$ VS $H_1: p_1 \neq p_2$

L.O.S. = 5%

Data:

$n_1 = 95$	$n_2 = 95$
$x_1 = 73$	$x_2 = 45$
$p_1 = x_1/n_1$	$p_2 = x_2/n_2$
$p_1 = 0.768421$	$p_2 = 0.47368421$

$P = 0.621053$; $Q = 0.378947$

$Z_{cal} = 4.18723736$

$Z_{tab} = 1.96$

Conclusion: $Z_{cal} > Z_{tab}$

We reject H_0

Therefore,

Proportion of girls & boys like to daily up-down are not same

Q.3)

Test for two means

μ_1 = Mean number of the student which are use the bus.

μ_2 = Mean number of the student which are use the train.

H_0 : Mean of students using vehicle Bus and Train are equal.

H1: Mean of students using vehicle Bus and Train are not equal

H0: $\mu_1 = \mu_2$ VS H1: $\mu_1 \neq \mu_2$

Data:

$\mu_1 = 0.8157$	$\mu_2 = 0.1052$
$s_1 = 0.151072$	$s_2 = 0.094681$
$n_1 = 95$	$n_2 = 95$

L.O.S.=5%

Z cal=54.93264 and Z tab=1.64

Conclusion: Z cal > Z tab; We reject H0

Therefore, Mean number of students using vehicle Bus and Train are not equal.

Q.16)

Test for two proportion

p1=Boys students feel secure surrounding during up-down.

p2=Girls students feel secure surrounding during up-down.

H0: Proportion of boys & girls feel secured surrounding during up- down are same.

H1: Proportion of boys & girls feel secured surrounding during up-down are not same.

Ho: $p_1 = p_2$ VS H1: $p_1 \neq p_2$ at L.O.S.=5%

Data:

$n_1 = 95$	$n_2 = 95$
$x_1 = 68$	$x_2 = 55$
$p_1 = x_1/n_1$	$p_2 = x_2/n_2$
$p_1 = 0.715789$	$p_2 = 0.57894737$

$$P=0.64736842 ; Q=0.35263158$$

$$Z_{cal}=1.97392294$$

$$Z_{tab}=1.96$$

Conclusion: $Z_{cal} > Z_{tab}$

We reject H_0

Therefore ,

Proportion of boys & girls feel secured surrounding during up-down are not same.

Q18)

Test for single mean.

H_0 : There is a Positive impact of daily up-down on students result.

H_1 : There is a Negative impact of daily up-down on students result.

$$H_0: \mu_1 = \mu_0 \quad \text{VS} \quad H_1: \mu_1 \neq \mu_0$$

Data:

$$\mu_0 = 0.6 \quad \text{At} \quad 60\%$$

$$\mu = 0.421053$$

$$\sigma = 0.245057$$

$$n=190$$

$$Z_{cal}=10.06547 \quad \text{and} \quad Z_{tab}=1.96$$

Conclusion: $Z_{cal} > Z_{tab}$

We reject H_0

Therefore, There is a Negative impact of daily up-down on students result.

Q.22)

Test for single population proportion

Ho: If students make complaint about their problems then the Investigation happens?

H1: If students make complaint about their problems then the Investigation Does not happen?

$$x=51 \quad ; \quad n=190$$

$$p=x/n \quad ; \quad p=0.268421$$

$$P=0.70 \quad \text{At } 70\% \quad Q=0.30$$

$$Z_{\text{cal}}=12.98158$$

$$Z_{\text{tab}}=1.64$$

Conclusion: $Z_{\text{cal}} > Z_{\text{tab}}$; We reject H_0

Therefore,

If students make complaint about their problems then

The Investigation does not happen.

Conclusion

- From our data we conclude that
- Most of the students are use bus or train for their daily up-down.
 - From multiple bar diagram we conclude that both male and female suffer from near about same mentally problem.
 - Most of the female suffer from headache and male suffer from body pain and also female students surfed from more stress than male.
 - From sub-divided bar diagrams we observe that male students are feel joyful than female. And female students feel insecure than male also female students feel more tired than male students.
 - 50% students are like to listening music for entertainment during the journey
 - From the two proportion test we conclude that male and female students are not in same proportion to like a daily up-down and not In same proportion to feel secure surrounding during the daily up-down.
 - From test of two populations mean use of vehicle bus or train are not equal.
 - Test of single mean proportion we conclude that the negative effect on the result of the students due to daily up-down.
 - From single population proportion test we say that when students are complaint about the unavailability of bus or train investigation is not happen.
 - From our observation of daily up-down students, the parents occupation is farmer and labor hence the bad economical condition is the reason behind their daily up-down.
 - Due to daily up-down there is decrease participation in extracurricular activities in college.

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