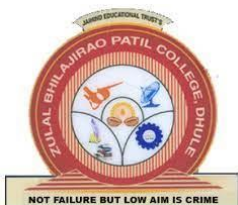




TITLE

Study and analysis of the socio-economic status of powerloom workers in Dhule city.

**Department of Statistics,
JET's Z. B. Patil College,
Dhule.**



Department of Statistics

JET's Z. B. Patil College, Dhule.

**Affiliated to Kavayitri Bahinabai Chaudhari North Maharashtra
University, Jalgaon.**

A PROJECT REPORT ON

**STUDY AND ANALYSIS OF THE SOCIO-
ECONOMIC STATUS OF POWERLOOM
WORKERS IN DHULE CITY**

Presented By

- Desale Gayatri Devidas
- Khairnar Krushnai Chandrakant
- Nikam Vikrant Dipak
- Nikumbh Kalpesh Sanjay
- Pathan Samiya Zuber

UNDER THE GUIDANCE OF

Prof. G. T. Pedram

In Partial Fulfillment of degree B.Sc. (Statistics)
Academic Year 2020-2021

CERTIFICATE

This is to certify that,

A project report on “STUDY AND ANALYSIS OF THE SOCIO-ECONOMIC STATUS OF POWERLOOM WORKERS IN DHULE CITY” Submitted by:

Desale Gayatri Devidas

Khairnar Krushnai Chandrakant

Nikam Vikrant Dipak

Nikumbh Kalpesh Sanjay

Pathan Samiya Zuber

Under Our guidance in partial fulfillment of requirement for award of “Bachelor of Science” (STATISTICS) of North Maharashtra University, Jalgaon in a academic year of 2020-2021.

Project Guide
Prof. G. T. Pedram
Department of statistics,
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ACKNOWLEDGEMENT

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THANK YOU!

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INTRODUCTION

India is country of vast and various kind of cultures, languages, food, clothes as well as professions also, Farming and its supplementary businesses are backbone of Indian Economy. Powerloom is also among them. Since Independence Indian Powerloom/Textile Industry has grown rapidly, but Powerloom workers are still one of the Marginalised Section of the Indian Society.

The purpose of this study is to know the Socio-Economic status of Powerloom Workers, which constitute mainly Income, Education, Occupation and does the profession of person having positive or negative impact on Person's Life.

In these projects we have tried to find out answers to the above questions, for this purpose we have considered Dhule City as our survey area. The observation is based truly on sample data, and inferences drawn are also based on sample data.

OBJECTIVES

1. To know the socio-economic status of Power loom workers.
2. To study the Income Distribution of Power loom workers.
3. To know the Impact of Covid19 on Power loom workers.
4. To study the problems of workers.
5. To highlight demands and expectation of power loom workers.
6. To check the satisfaction of power loom workers.

QUESTIONNAIRE

1. Name:
2. Age:
3. Gender:
4. Education:
5. What is the occupation of your father?
 - a) Loom worker b) Labour
 - c) government servant d) business
6. What is your monthly income?
7. How many machines handled by you?
8. Do you have any side business?
 - a) yes b) No
9. Which Type of House do you have?
 - a) Rental b) own
10. Do your children go to school? If yes, in which school, in which medium your children are studying?
11. Which type of ration card you have?
 - a) Yellow b) Orange c) other

12. Do you have your own vehicle?

- a) Cycle b) Bike c) Auto d) None

13. Which type of medical treatment do you prefer?

- a) Civil b) Private c) Both

14. Are you addicted?

- a) Yes b) No

15. Do you suffer from any Disease?

- a) Yes b) No

16. On which cloth (Sari) you work?

- a) White b) Colour c) polyester d) All

17. What problems and challenges you facing in your work?

- a) Effect on salary due to Irregular load shedding.
b) Effect on salary due to Cloth damage.
c) Heavy workload, no flexibilities.
d) Nothing.

18. Is there any impact of Covid-19 (Lockdown) on your profession economically?

- a) Yes b) No

19. Which type of profession will you prefer for your children?

20. What is your expectation from your boss?

21. What is your expectation from govt.?

22. Do you happy with your profession?

a) Yes b) No

Data Collection / Presentation

SR. NO.	1	2	3	4	5	6
1	Krushna Shantaram Patil	51	Male	12	b	10,000
2	Ansari Hassan Nazeer	38	Male	7	b	8000
3	Ansari Nasir Gulam	39	Male	3	b	8000
4	Ansari Shafique Iqbal	40	Male	8	c	10000
5	Pathan Sadique Ashfaq	45	Male	10	a	8000
6	Ansari Faheem Mukhtar	32	Male	5	a	10000
7	Ansari Mustaqeem Habeebullah	35	Male	5	b	10000
8	Ansari Saood Masood	20	Male	4	b	6000
9	Ansari Umair Masood	22	Male	12	c	6000
10	Ansari Abdulmajeed Husain	35	Male	7	a	8000
11	Ansari Kaleem Nazeer	41	Male	7	a	6000
12	Ansari Abdurrasheed Kareem	57	Male	4	b	4800
13	Ansari Sharique Sharif	31	Male	8	b	6000
14	Ansari Kaleem Abdulhai	55	Male	4	b	12000
15	Ansari Waseem Nishat	37	Male	8	a	7000
16	Ansari Imran Abdulmjeed	26	Male	10 fail	b	6000
17	Ansari Abdussamad Gulam	34	Male	7	b	6000
18	Ansari Raees Aamir	52	Male	12	a	6000
19	Ansari Imran Anis	55	Male	10	b	12000
20	Shaikh Azharuddin Nuruddin	35	Male	10	b	14000
21	Ansari Mohammad Shafiq	40	Male	8	b	12000
22	Shaikh Haris Zakir	32	Male	8	a	12000
23	Shaikh Aftab Zaid	44	Male	10	b	15000
24	Rangrez Sakib Rauf	66	Male	3	c	10000

7	8	9	10	11	12	13	14	15	16
5	a	a	Govt.	a	a)	a	a	a	a)
3	b	b	Govt.	b	b)	a	b	b	b)
8	b	b	Govt.	b	b)	c	a	b	a)
4	a	b	Govt.	a	b)	a	a	a	b)
6	a	b	Govt.	a	d)	a	b	b	a)
3	a	b	Govt.	a	a)	a	a	b	b)
10	b	b	Govt.	a	c	b	b	a	c)
8	b	b	Govt.	b	a	b	b	b	a)
8	b	b	Govt.	b	a)	b	a	a	a)
10	a	b	Govt.	a	b)	a	b	b	b)
3	b	b	Govt.	b	b)	a	b	a	b)
2	b	b	Govt.	d	a	a	b	b	b)
3	b	b	Govt.	a	a	a	a	b	b)
3	b	b	-	b	d)	b	a	a	b)
3	a	b	Govt.	a	b)	c	b	b	b)
10	b	b	Govt.	a	a	b	a	a	c)
8	b	b	Govt.	a	c	a	b	b	a)
10	b	b	Govt.	d	b)	b	b	a	c)
5	a	b	Govt.	a	b)	a	b	b	a)
6	b	b	Govt.	b	a)	b	b	a	b)
8	b	b	Govt.	a	b)	a	a	b	d)
7	a	b	Govt.	b	a)	a	a	a	d)
6	b	a	Govt.	b	b)	c	b	b	d)
COLOUR	a	b	-	b	a)	b	b	a	-

17	18	19	20
d	a	Want to make officer but lack of Money	Nothing: He fulfill their needs when they needy
c	a	Govt. Job	Should Increase Salary
b	a	Job	Nothing: He fulfill their needs when they needy
d	b	Govt. Job	Nothing
c	b	Govt. Job	Shoud increases a payment
c	b	Educate Them and make a Teacher	Nothing: He fulfill their needs when they needy
a	a	Educate them and make officer	Nothing: He fulfill their needs when they needy
d	a	HAVE A GOOD life	Nothing
c	a	Police man	Nothing
a	b	Educate them and make officer	Should give advance payment when in need
d	a	Govt. Job	Nothing
a	a	Govt. Job	Nothing
d	a	Govt. Job	Nothing: He fulfill their needs when they needy
a	a	Job	Nothing
b	b	Good Education, Good Job	Nothing: He fulfill their needs when they needy
a	b	Powerloom Worker	Nothing: He fulfill their needs when they needy
d	a	Good Education, Good Job	Nothing: He fulfill their needs when they needy
d	a	Educate Them and make a Teacher	Nothing: He fulfill their needs when they needy
d	b	HAVE A SATISFACTORY LIFE	Nothing
a	a	Nothing Special	Nothing
a	a	Teacher	Nothing
d	b	Nothing Special	Nothing: He fulfill their needs when they needy
a	a	Good Service	Nothing: He fulfill their needs when they needy
a	b	Police man	Nothing: He fulfill their needs when they needy

21	22
Nothing	b
Nothing	a
Loadshedding should be stopped	a
Labour Code should be applied	b
Nothing	b
Should Provide Facility when work is close	a
Should Give Subsidy	a
Should Provide Facility when work is close	a
Nothing Special, Earlier Power failure was consistent but now its okay	b
Nothing	a
Should Provide Facility when work is close	a
Nothing Special, Earlier Power failure was consistent but now its okay	a
Should Provide Facility when work is close	a
Nothing	b
Should Provide Facility when work is close	a
Should deal with Consistent Power Failure	a
Should Provide Facility when work is close	a
Should Provide Facility when work is close	b
Nothing	b
Nothing	a
Nothing	b
Nothing	a
Nothing	b
Nothing	b

25	Ansari Razin Mujahid	60	Male	5	d	10000
26	Saad Afzal Khan	37	Male	1	d	11000
27	Ansari Ittekhar Masud	48	Male	7	a	9000
28	Shaikh Faiz jalal	50	Male	10	a	12000
29	Ansari Yaman Abullas	40	Male	10	d	24000
30	Rangrej Aarif Faizal	43	Male	10	a	18000
31	Ansari Nabil Rashid	32	Male	7	a	10000
32	Ansari Rehan Akbar	52	Male	4	a	11000
33	Ansari Abu-Talah Manik	38	Male	8	a	11000
34	Ansari Anas Salman	46	Male	12	c	12000
35	Khan Munib Rizwan	62	Male	5	b	10000
36	Pathan Salman Akram	55	Male	8	b	14000
37	Maniyar Naeem Farukh	38	Male	10	a	14000
38	Khan Aman Nasir	40	Male	10	c	12000
39	Pathan Rehan Raees	57	Male	4	c	11000
40	Pinjari Awais Salim	25	Male	11	b	8000
41	Ansari Saad Isrque	27	Male	10	b	10000
42	Shah Shahid Arif	45	Male	9	a	12000
43	Shah mujeeb Jabbar	38	Male	12	a	13000
44	Ansari Rashid Khalid	35	Male	8	d	14000
45	Ansari Mohammad Imran	38	Male	10	a	12000
46	Ansari Mohammad Umair	38	Male	4	b	10000
47	Jahur Ahmad	30	Male	8	b	14000
48	Atif Rahman	36	Male	8	d	12000

10	b	b	-	a	a)	c	a	b	b)
6	b	b	Govt.	b	b)	a	b	a	d)
TRANSPORTATION	b	b	Govt.	a	a)	a	b	b	-
7	a	b	Govt.	a	b)	c	b	b	d)
4	b	b	Govt.	b	b)	b	a	a	d)
COLOUR	b	a	Govt.	a	a)	a	b	b	-
6	b	b	Govt.	b	a)	a	a	a	a)
5	a	b	Govt.	b	a)	c	b	b	b)
7	b	b	Govt.	b	b)	a	a	b	b)
6	b	a	Govt.	a	a)	a	b	a	d)
COLOUR	a	b	-	a	a)	a	b	b	-
4	b	b	Govt.	b	b)	a	a	a	b)
6	b	b	Govt.	b	a)	a	a	b	d)
5	b	b	Govt.	a	a)	b	b	b	a)
7	a	b	Govt.	a	a)	a	a	a	a)
4	b	a	Govt.	b	a)	a	b	b	d)
5	a	b	Govt.	a	a)	c	a	a	d)
7	b	b	Govt.	a	b)	a	b	b	d)
6	b	b	Govt.	b	b)	a	b	a	c)
5	b	a	Govt.	b	a)	a	b	a	a)
10	a	b	Govt.	a	a)	a	a	a	a)
4	a	a	Govt.	d	a)	a	a	b	a)
8	b	b	-	a	b)	b	b	b	a)
8	b	b	Govt.	a	a)	a	b	a	c)

c	a	Nothing Special	Nothing
c	b	Pharmacist	Nothing: He fulfill their needs when they needy
a	a	Nothing Special	Nothing: He fulfill their needs when they needy
d	b	Have a good life	Nothing: He fulfill their needs when they needy
a	a	Himself owner	Reduce time hours
a	b	Govt. Job	Nothing
a	a	Police man	Help when in need
a	a	Pharmacist	Nothing: He fulfill their needs when they needy
d	a	Nothing Special	Nothing
a	a	Govt. Job	Nothing: He fulfill their needs when they needy
a	b	Nothing Special	Nothing: He fulfill their needs when they needy
c	b	Have a good life	should increase wages
b	a	Nothing Special	Nothing: He fulfill their needs when they needy
c	a	Govt. Job	Reduce time hours
d	b	HAVE A SATISFACTORY LIFE	Nothing
c	a	LOOM WORKER	Increase wages
a	b	TEACHER	should pay for medical expenses
a	a	PHARMACIST	Nothing
d	a	Nothing Special	Nothing: He fulfill their needs when they needy
a	a	Nothing Special	Nothing: He fulfill their needs when they needy
a	b	Doctor, But Not enough Money	Nothing: He fulfill their needs when they needy
a	b	Teacher	Nothing
d	a	Doctor, But Not enough Money	Nothing
c	a	LOOM WORKER	Should give advance payment when in need

Pension Scheme should be started	a
Nothing	a
Nothing	a
Nothing	a
Nothing	a
Should set up Pension scheme	b
Nothing	b
Nothing	a
Nothing	a
Nothing	a
Nothing	b
Nothing Special, Earlier Power failure was consistent but now its okay	a
Should bring pension scheme	b
Nothing	a
Should apply pension scheme	a
Nothing	b
Should apply pension scheme	b
Nothing	a
Nothing	a
Nothing	b
Nothing	b
Nothing Special, Earlier Power failure was consistent but now its okay	a
Nothing	a
Nothing	a

STATISTICAL ANALYSIS

1. Regression Analysis.

To test,

H_0 = income does not depend on “number of machines” handled by workers.

Vs

H_1 = income depend on “number of machines” handled by workers.

```
x=c(5,3,8,4,6,3,10,8,8,10,3,2,3,3,3,10,8,10,5,6,8,7,6,10,6,7,6,5,7,6,4,6,5,7,4,5,7,6,5,10,4,8,8); length(x);
```

```
[1] 43
```

```
y=c(10,8,8,10,8,10,10,6,6,8,6,4,8,6,12,7,6,6,6,12,14,12,12,15,10,11,12,10,11,11,12,14,14,12,11,8,10,12,13,14,12,10,14,12); length(y);
```

```
[1] 43
```

```
> reg=lm(y~x);reg;
```

Call:

```
lm(formula = y ~ x)
```

Coefficients:

(Intercept)	x
10.02680	0.01754

```
> plot(x,y,main="Scatter Diagram",xlab="No. of Machines",ylab="Income");
```

```
> summary(reg);
```

Call:

```
lm(formula = y ~ x)
```

Residuals:

Min	1Q	Median	3Q	Max
-5.2619	-2.1496	-0.0794	1.8592	4.8680

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	10.02680	1.24683	8.042	5.81e-10 ***
x	0.01754	0.18993	0.092	0.927

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

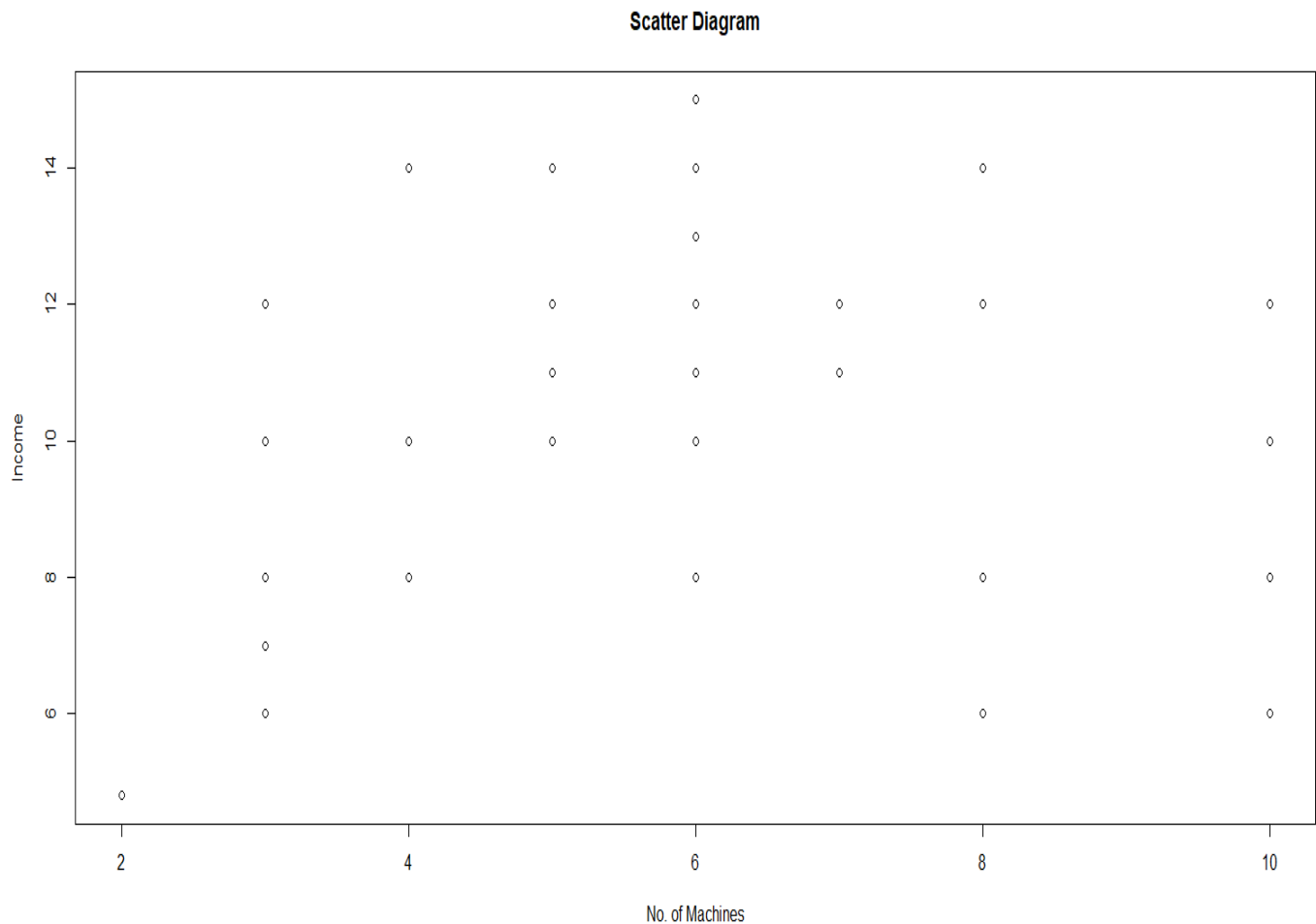
Residual standard error: 2.816 on 41 degrees of freedom

Multiple R-squared: 0.0002079, Adjusted R-squared: -0.02418

F-statistic: 0.008526 on 1 and 41 DF, p-value: 0.9269

```
> summary(aov(reg));
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
x	1	0.1	0.068	0.009	0.927
Residuals	41	325.2	7.931		



Here we want to test Hypothesis

$H_0: \beta_1=0$ vs $H_1 \beta_1 \neq 0$

Here, value of F ratio is 0.009

$F_{1,41,0.05} = 4.07854$

We observe that value of F ratio is less than $F_{1,41,0.05}$

Data support hypothesis $H_0: \beta_1=0$

Conclusion:

In other words, “No. Of Machines” handled is not significant.

No. of Machines handled does not explain variability in Income

2.Fitting of normal distribution.

Class (Income)	Freq. (No. of Workers)
4 - 6	1
6. - 8	8
8. - 10	6
10. - 12	14
12. - 14	11
14. - 16	6
16. - 18	0
18. - 20	1
20. - 22	0
22 - 24	1

lb	ub	x	f	fx	fx^2
4	6	5	1	5	25
6	8	7	8	56	392
8	10	9	6	54	486
10	12	11	14	154	1694
12	14	13	11	143	1859
14	16	15	6	90	1350
16	18	17	0	0	0
18	20	19	1	19	361
20	22	21	0	0	0
22	24	23	1	23	529
		140	48	544	6696

x bar	11.33333
var	11.05556
s.d.	3.32499

Sr.no.	lb	ub(x)	F(x)	prob	ef
1	below	4	0.014	0.014	0.658
2	4	6	0.054	0.041	1.951
3	6	8	0.158	0.104	4.977
4	8	10	0.344	0.186	8.936
5	10	12	0.579	0.235	11.29
6	12	14	0.789	0.209	10.04
7	14	16	0.92	0.131	6.29
8	16	18	0.978	0.058	2.772
9	18	20	0.995	0.018	0.86
10	20	22	0.999	0.004	0.187
11	22	24	1	6E-04	0.029
12	24	above	1	7E-05	0.003
Total				1	48

Ho: Fitting Is Good

Sr. No.	Ei	Oi	$(O_i - E_i)^2 / E_i$
1	7.586	9	0.2634242
2	8.936	6	0.9644689
3	11.29	14	0.6494913
4	10.04	11	0.0908044
5	6.29	6	0.0133735
6	3.851	2	0.8897882
Total			2.8713504

Chi. Sq. Calculated: 2.87135

d.f.(n-k-1): 3

Chi. Sq. Table: 7.814728

n= no. of classes after pooled

k= no. of parameter estimated

Chi. Sq. Table > Chi. Sq. Calculated

**Accept Ho.
Fitting of Normal Distribution is Good.**

Conclusion:

Normal Distribution fit the given data.

3. Large sample test for proportion.

X = Numbers of workers having orange ration card.

$H_0 : P = 0.5$ vs $H_1 : P \neq 0.5$

p= 0.4375

P= 0.5

n= 48

x= 21

α = 5%

Statistics = $(p - P) / \sqrt{PQ/n}$ = -0.86603

Ztab= 1.96

$|Z_{cal}| < Z_{tab}$

accept H_0 .

Conclusion:

There is equal no of families of Loom Workers having
Above Poverty Line AND Below Poverty Line RATION CARDS

4. Yule's coefficient of association

A: Person having side business

B: Person having impact of Covid-19

β : person not having impact of covid-19

α : Person does not have side business

Side Business	Impact of Covid-19		Total
	Yes(B)	No(β)	
Yes(A)	2	14	16
No (α)	26	4	32
Total	30	18	48

we have,

$$N=48 \quad (AB)=2 \quad (\alpha B)=26 \quad (\alpha\beta)=4 \quad (A\beta)=14$$

$$Q = (AB)(\alpha\beta) - (A\beta)(\alpha B) / (AB)(\alpha\beta) + (A\beta)(\alpha B)$$

$$Q = (2*4) - (14*26) / (2*4) + (14*26)$$

$$Q = -0.8888$$

Conclusion:

Two attributes are negatively associated.

i.e., person having side business are not impacted by covid-19

5. chi sq. test for independence of attributes.

To test,

H0: Two attributes under study are independent.

Observed frequencies

	Addiction		
Disease	Addicted	Not addicted	Total
Yes	12	10	22
No	8	18	26
Total	20	28	48

Expected frequencies

	Addiction		
Disease	Addicted	Not addicted	Total
Yes	9.17	12.83	22
No	10.83	15.17	26
Total	20	28	48

To test this hypothesis, use p-value and conclude.

$$p\text{-value} = 0.0959485 > 0.05$$

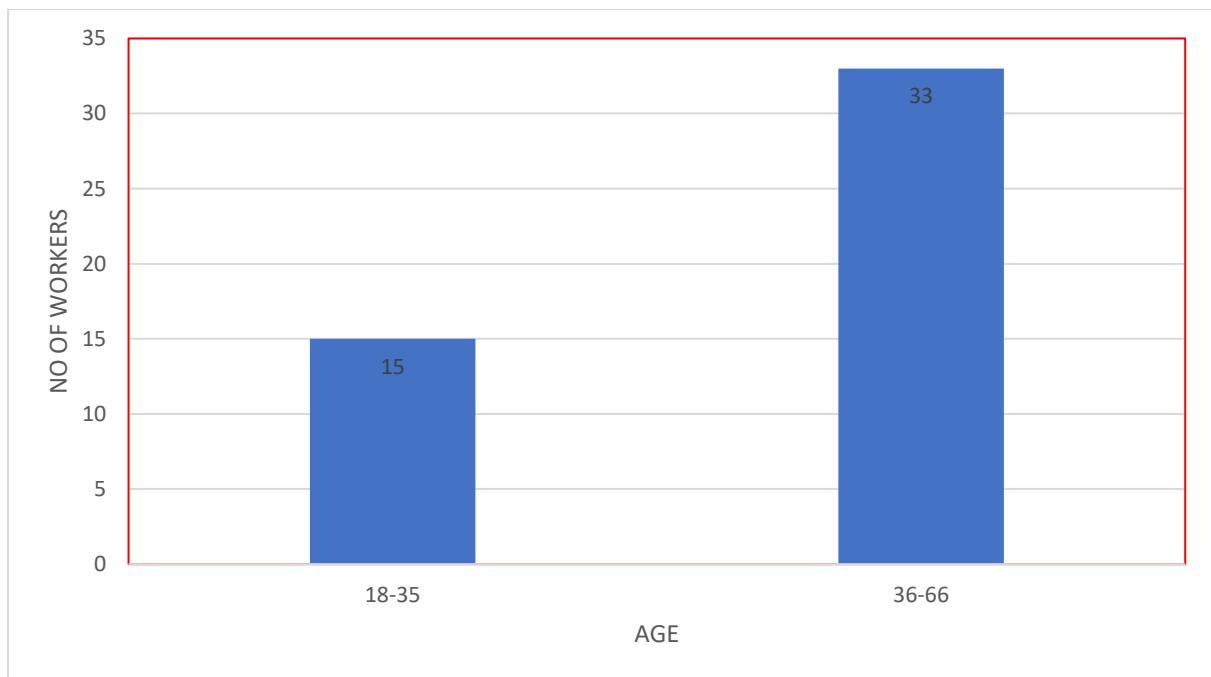
Accept H0

i.e. Two attributes are independent or two attributes are significant

DATA COLLECTION / PRESENTATION

1. Simple Bar Diagram

AGE	NO. OF WORKERS
18-35	15
36-66	33

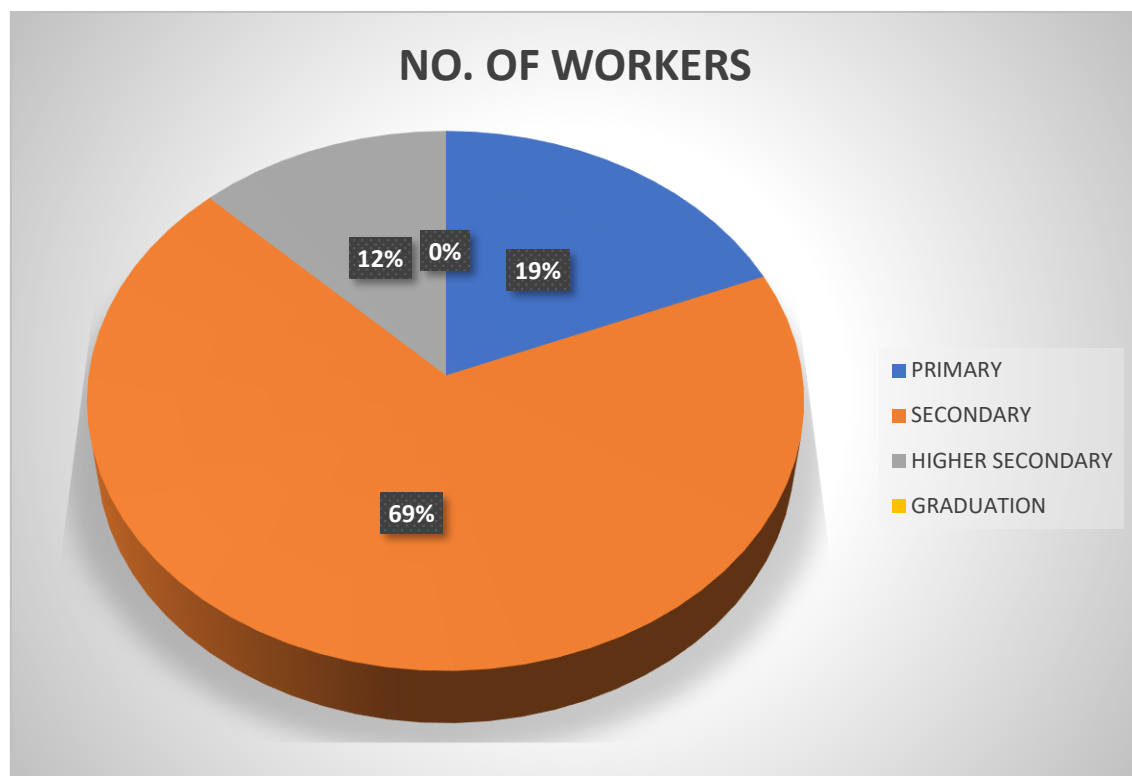


Conclusion:

From above graph, we can conclude that 31% population of loom workers is young.

2. Pie Diagram

EDUCATION	NO. OF WORKERS
PRIMARY	9
SECONDARY	33
HIGHER SECONDARY	6
GRADUATION	0

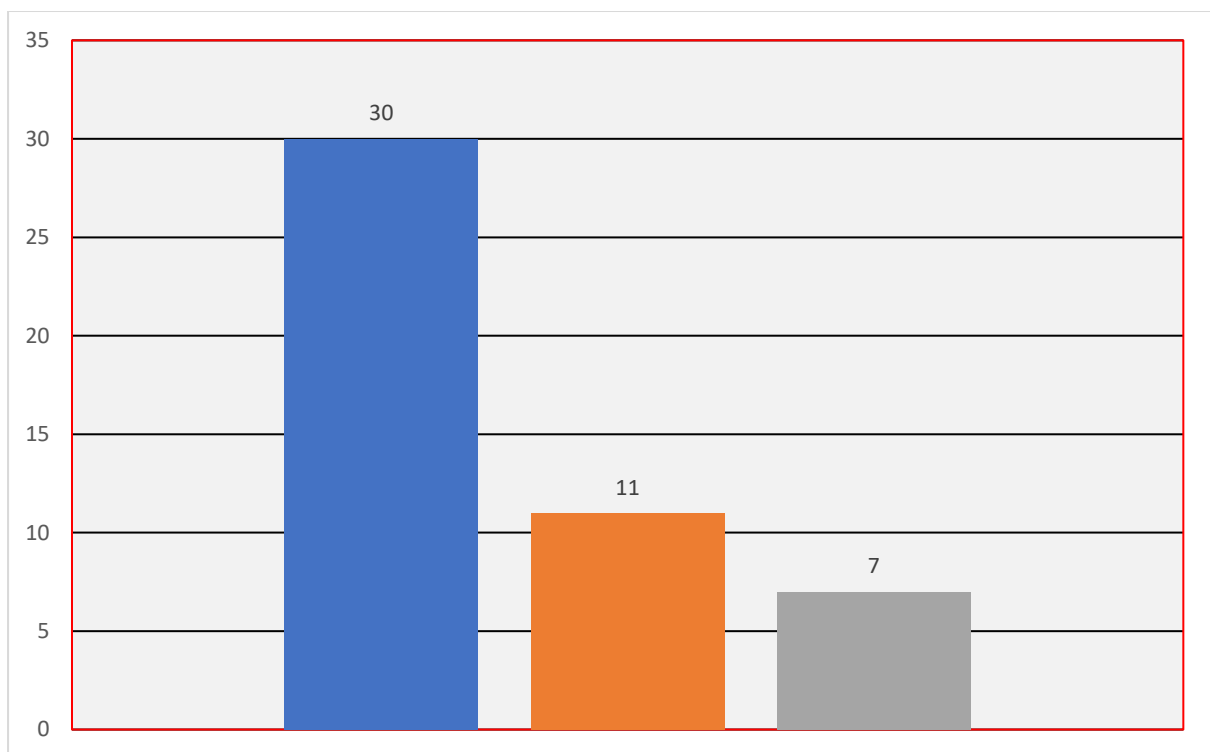


Conclusion:

From above pie chart, we can conclude that 69% of population of loom workers had completed their secondary education.

3. Simple Bar Diagram

Medical Treatment	No of workers
Civil	30
Private	11
Both	7

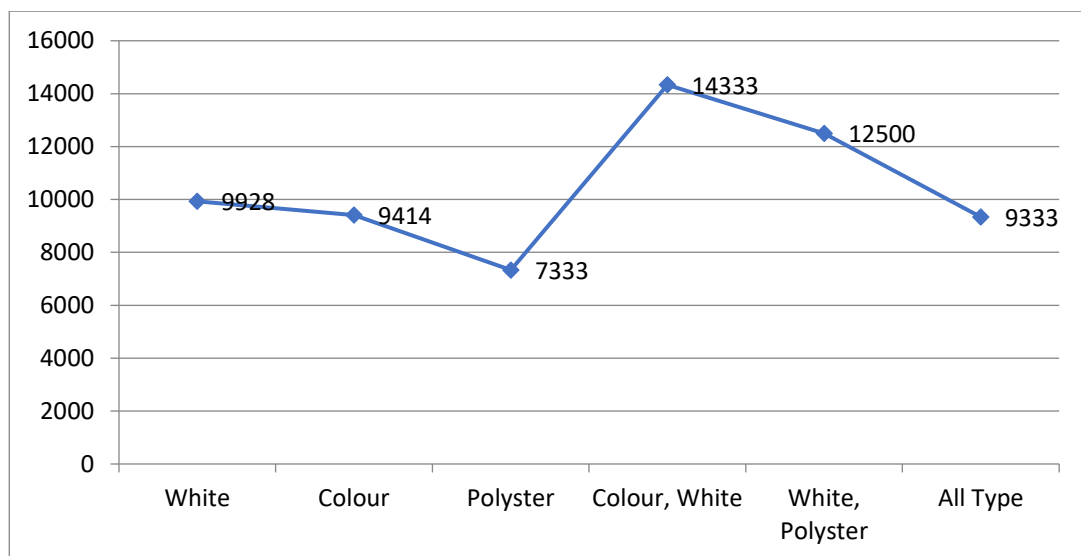


Conclusion:

From above graph, we can conclude that maximum numbers of workers prefer to use civil medical treatment.

4. Scattered line

Type	Avg. Income
White	9928
Colour	9414
Polyester	7333
Colour, White	14333
White, Polyester	12500
All Type	9333



Conclusion:

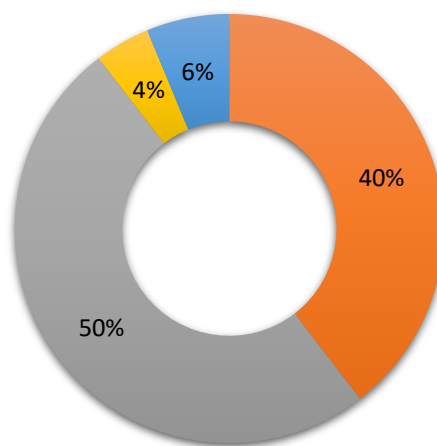
From above graph, we can conclude that workers working on both (white , colour) cloths have more income than athers.

5. Donut Chart

Type of vehicle	No. of workers
Bike	19
Cycle	24
Auto	2
None	3

No. of workers

■ Bike ■ Cycle ■ Auto ■ None

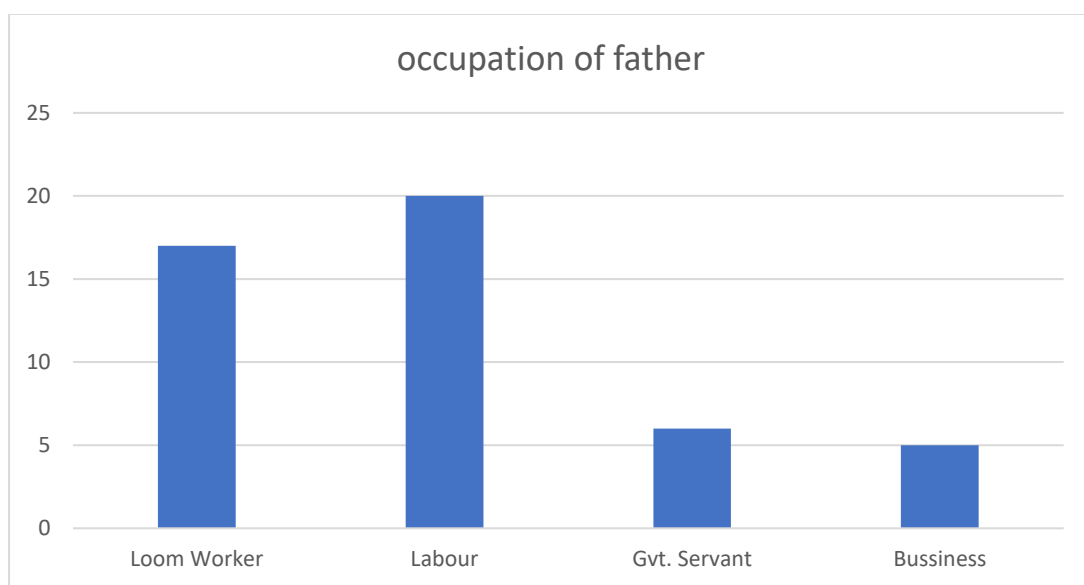


Conclusion:

From above graph, we can conclude that maximum numbers of workers have cycle.

6. Simple bar diagram

Loom Worker	17
Labour	20
Govt. Servant	6
Business	5

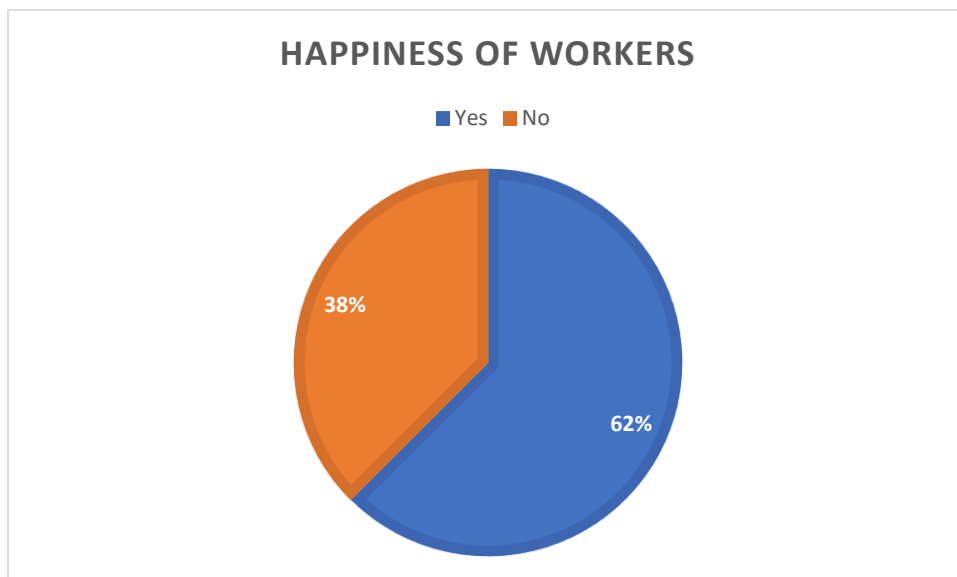


Conclusion:

From above graph, we can conclude that most of the worker's fathers are labours.

7. Pie diagram

Response	No. of workers
Yes	30
No	18



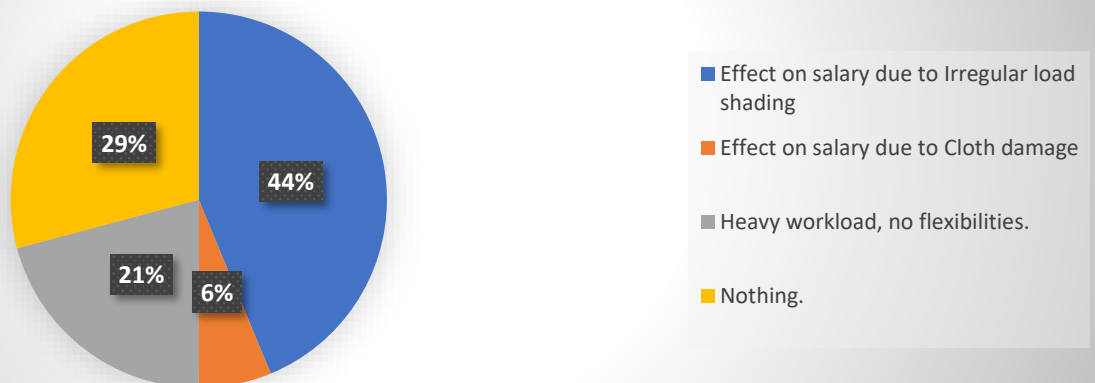
Conclusion:

From above graph, we can conclude that maximum number of workers i.e. 62% are happy with their profession.

8. Pie diagram

Problems	Workers
Effect on salary due to Irregular load shedding	21
Effect on salary due to Cloth damage	3
Heavy workload, no flexibilities.	10
Nothing.	14

problems and challenges faced by workers



Conclusion: From above pie diagram, we can conclude that 50% of workers face economical challenges due to irregular load shedding.

CONCLUSION

- Number of machines handled by the loom workers **does not explain variation** in their income.
- Normal Distribution fit the income of PowerLoom Workers, i.e., Income of Loom workers is **Normally Distributed**.
- Proportion of families living above poverty line and below poverty line are **equal**.
- Loom Workers having side business are **less impacted** by Covid-19 Lockdown.
- Worker's disease is **not dependent** upon their addiction habit, but attributes are **significant**.
- $\frac{1}{3}$ rd of the Loom Workers are from **young age** population.
- $\frac{2}{3}$ rd of the Loom Workers has Completed their **Secondary Education**.
- **Maximum** no. of workers prefers to use **Civil/Government Medical Facilities**.
- Loom Workers working on **both (White, colour)** type of clothes have **more income** than others.
- **50%** of The PowerLoom workers have **cycle** as their vehicle.
- Most of the worker's fathers are **labours**.
- maximum number of workers i.e., **62%** are **happy** with their profession.

FINDINGS

PowerLoom workers are facing so many economic challenges/problems which are affecting their social Life too. Even after the heavy work load and long shifts, they are getting relatively less wages. Due to which, some of them who are willing to educate their child are not been able to do that and most of them doing side business. They just have basic demands from Government and Owners like -

- Load shedding should be minimized, which affects their salary.
- Working hours should be flexible.

Despite of having such economic and social problems, most of the Loom Workers are happy with their life.

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- WWW.Statisticalresearch.in
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- Previous year project reports.
- www.wikipedia.com
- Research methodology, methods and techniques (C.R. Kothari)

SOFTWARE USED

- Microsoft Word
- Microsoft Excel
- R - Software

THANK YOU!!