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## **A Study of Facilities Provided by Hostel Management System using Statistical Techniques**

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### **ABSTRACT:**

The college aims to offer the best possible environment and learning experience to encourage students to perform to their full potential for academic achievement. The main factors in the development of college are students, teachers, parents and alumni which help to evaluate how its service policies and make changes as per stakeholders requirements. Our aims to certain the adequacy of the hostels and other general facilities provided to the students and investigate the level of satisfaction of the students to the available facilities. Hostel is becoming a necessity with increasing number of students coming from peripheral areas. Hostel life is not without problems, limitations and challenges. To show student satisfaction with hostel facilities and look into the issues of hostel life, we systematic preferred questionnaires were used in data collection from hostel students taken as the sample for the study. The collected information is analyzed using several statistical tools and techniques.

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**KEY WORDS:** Hostel Life, Facilities, Graphical Representation, Large Test, Level of Significance

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### **INTRODUCTION:**

Human personality is shaped by the experiences of life. When a child is born the family provides a protective environment for the child, at the beginning the interactions are limited latter social interactions increase, and the process of socialization starts. Education plays an important role in our life. For the economical and social development education is a must requirement, with the higher education sector becoming an increasingly competitive market, college student satisfaction has become an important component of quality assurance. Hostels are providing residential opportunities for the students to continue the process of education. Living away from family for a specific period of time leaves some enduring experiences in the life of the students. In this new life style student learns to live independently, and learn how to compromise with the other students and roommates.

Hostel environment gives an opportunity for socialization among students. The purpose of providing feedback to the students is to help teachers and students to identify their strengths and weaknesses. Feedback is an essential component in the learning and explains the gaps in knowledge and understanding, providing for reflection and development. A survey on hostel life gives view of students and shows the various positive and negative effects of hostel life. A hostel is like a family of students with the warden as the head. Students develop a sense of friendship and fellow feeling. Students learn the value of discipline.

M. Memon, M. A. Solangi, S. Abro (2019) studied Analysis of Students' Satisfaction with Hostel Facilities and Their results indicated that there is strong evidence of significance relationship between the results of the parameters (Food Quality, Cleanliness, Water supply and First aid) services.

Prakash Chougule et.al(2021) studied certain the adequacy of the hostels and other general facilities provided to the students and investigate the level of satisfaction of the students to the available facilities. Systematic preferred questionnaires were used in data collection from hostel students taken as the sample for the study. The collected information are analysed using several statistical tools and techniques. The study revealed that respondents were dissatisfied with the adequacy and functionality of some facilities such as purity of drinking water, lackness of mess facility, health center facilities and internet facility provided in college campus.

We study feedback on hostel facilities and mess facilities of different hostels. We observe here are the students are satisfied with the hostel facilities and how they look at their college atmosphere. Because students satisfaction helps in attracting retaining high achievers who in turn increase reputation and standing of the college. Maintaining and improving students' satisfaction has been considered as an important goal of education and college with the assumption that student satisfaction is indicative of institutional effectiveness. Accessing student satisfaction provides a way that college can focus directly on issues of quality development in order to ensure that educational students are high. In the beginning the hostel was considered as a placement for living purpose for the students at cheaper role. But now that concept has changed and it is more than that.

By considering all these things we decided to study in this article through feedback measure the satisfaction level of the students towards hostel and general facilities provided by Rajarshi Chhatrapati Shahu College, Kolhapur. To achieve our aim, it is important to collect the response of the students from this college. We directly take the data from feedback form in the form of primary data and it analyzed through several statistical tools and techniques. In this study we focus on student feedback regarding on hostel and general facilities provided by the college

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### OBJECTIVES:

- ❖ To study the independence between area and gender.
- ❖ To study the independence between area and qualification.
- ❖ To study facility of newspaper in girls and boys hostel.
- ❖ To study the facility of solar system in girls and boys hostel.
- ❖ To study the independence between area and internet facility.
- ❖ To study the difference between male and female hostel.
- ❖ To study the permission of participation in social work.
- ❖ To analysis the mess facility in different hostels.
- ❖ To find out which factors affected on hostel facilities.

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### METHODOLOGY:

Both the qualitative and quantitative methods are used for data collection. Primary data was collected with the help of survey technique through questionnaire. Two stage sampling procedure was used. In first stage 7 hostel of girls and boys were selected randomly from Kolhapur district. In second stage from 7 hostels we collected 250 samples for our project. Then questionnaires were filled out by 250 students.

Personal observation and questionnaire technique was used. Questionnaire was carried out to collect the information about hostels.

### STATISTICAL SOFTWARE:

- 📊 MS-Excel
- 📄 MS-Word
- 📊 R-Software

### STATISTICAL TOOLS:

- Graphical Tools: Bar diagram, Multiple Bar diagram, Pie chart.
- Test : Chi-Square Test, Krushal Wallis Test.
- Non Parametric Test : K S Test, Mann-Whitney U Test.
- Other Statistical Methods : ANOVA

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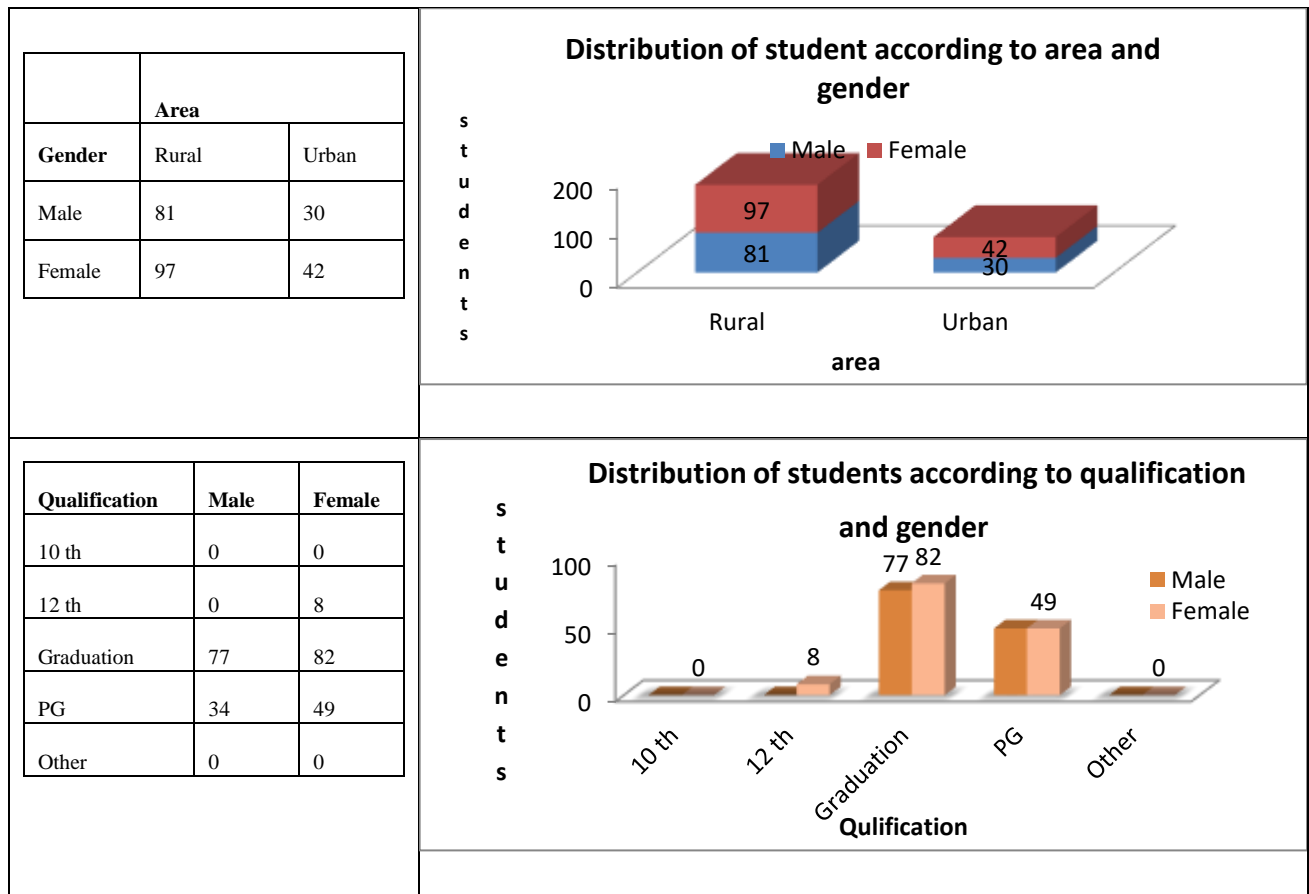
### Methods of Data collection :

For this study, we have collected primary data from 250 students from 7 different girls and boys hostels from Kolhapur district.

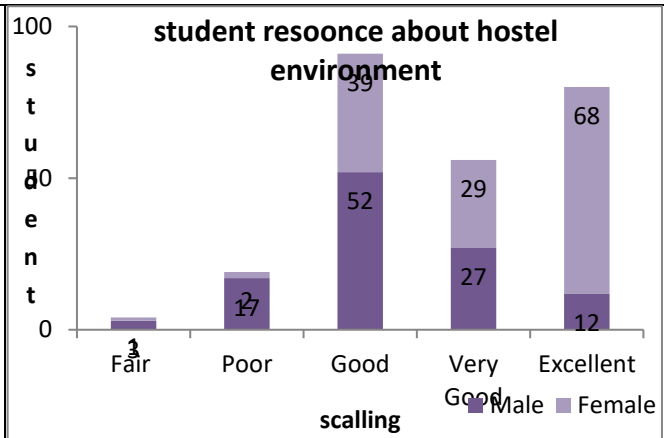




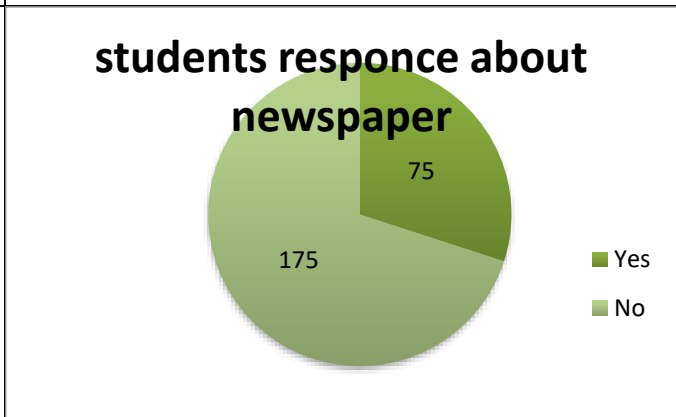
**GRAPHICAL REPRESENTATION**



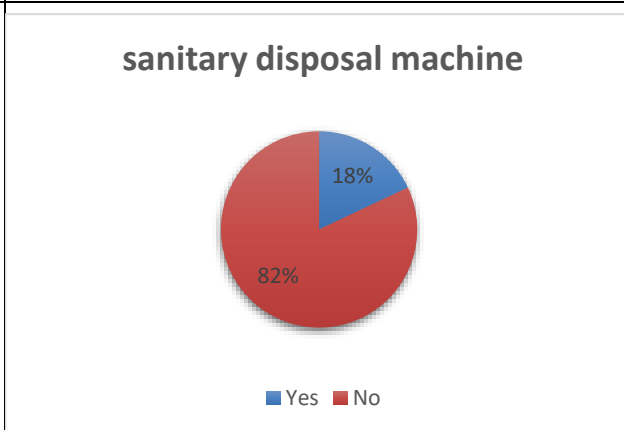
Calm & Peaceful Environment		
SCALLING	Male	Female
Fair	3	1
Poor	17	2
Good	52	39
Very Good	27	29
Excellent	12	68



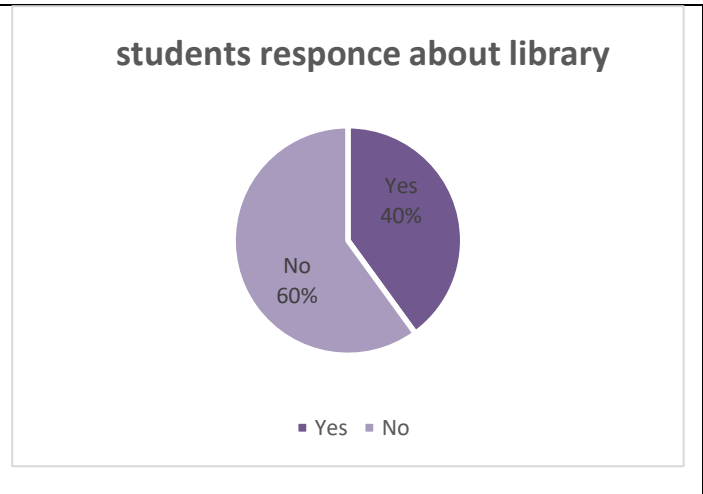
Newspaper		
	No. of student	Probability
Yes	75	0.3
No	175	0.7



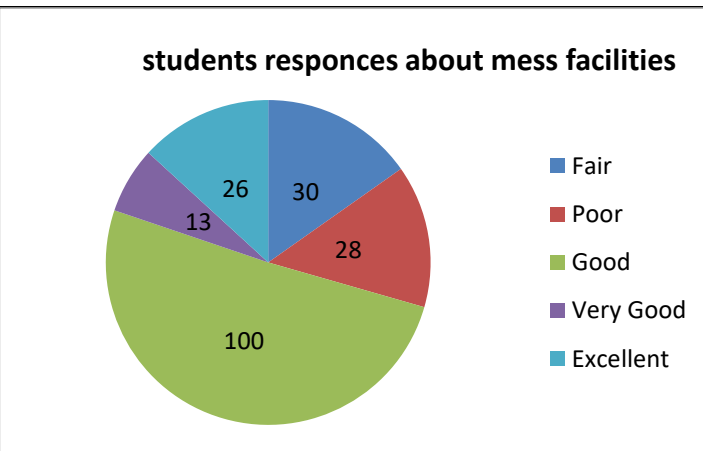
sanitary disposal machine		
	No. of female	Probability
Yes	25	0.18
No	114	0.82



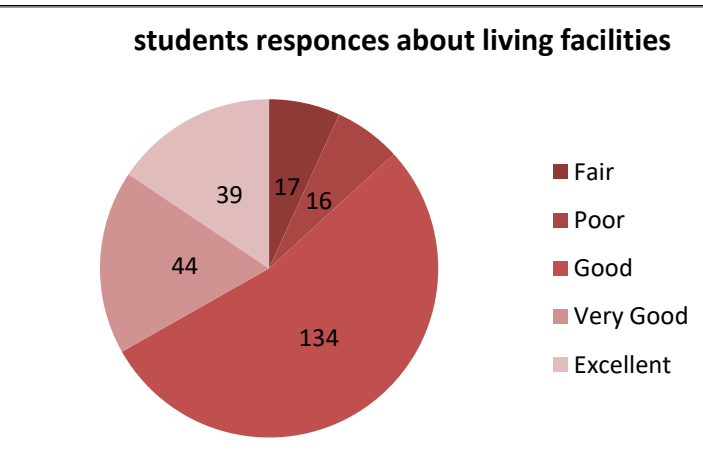
library in hostel		
	No. of student	Probability
Yes	100	0.4
No	150	0.6



overall messs facilities	
Fair	30
Poor	28
Good	100
Very Good	13
Excellent	26



Overall living facilities	
Fair	17
Poor	16
Good	134
Very Good	44
Excellent	39



**TESTING OF HYPOTHESIS:**

A) *Chi-square Test:*

a) *Chi-square Test for independence of attributes Area and Gender.*

Ho: The attributes area and gender are not independent

H1: The attributes area and gender are not independent

$\alpha$ =Level of significance=5%

**Observation table :**

		Area		
		Rural	Urban	Total
Gender	Male	81	30	111
	Female	97	42	139
Total		178	72	250

**Test Statistics:**  $\chi^2 = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i}$

Under Ho:  $\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 0.306041228$  and  $\chi^2_{tab} = 7.879439$  and  $\chi^2_{cal} < \chi^2_{tab}$

**b) Test for independence between Qualification and Area.**

Ho: There is independency between qualification and area.

H1: There is dependency between qualification and area.

Observation table :

		Qualification					Total
		10 th	12 th	Graduation	PG	Other	
Area	Rural	0	6	113	59	0	178
	Urban	0	2	46	24	0	72
	Total	0	8	159	83	0	250

Under Ho:

$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 0.0199$  and  $\chi^2_{tab} \text{ 4d.f} = 14.86026$   $\chi^2_{calculated} < \chi^2_{tabulated}$

**3) To Test independence between Qualification and Gender.**

Ho : There is independence between qualification and Gender.

H1 : There is dependence between qualification and Gender.

**Observation table :**

		Qualification					Total
		10 th	12 th	Graduation	PG	Other	
Gender	Male	0	0	77	34	0	111
	Female	0	8	82	49	0	139
	Total	0	8	159	83	0	250

$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 1.441$  and  $\chi^2_{tab} \text{ 4d.f} = 14.86026$  Since ,  $\chi^2_{cal} < \chi^2_{tab}$

**4) Test for relationship between Newspaper and Gender.**

Ho: There is relationship between Gender and facility of newspaper.

H1: There is no relationship between Gender and facility of newspaper.

**Observation table:**

Newspaper							
Gender		Fair	Poor	Good	Very good	Excellent	Total
	Male	2	4	6	3	6	21
	Female	2	5	31	15	3	56
	Total	4	9	37	18	9	77

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 3.015 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} < \chi^2_{tab}$$

**5) To Test independence between Gender and facility of solar system.**

Ho: There is independence between Gender and Facility of solar system.

H1: There is dependence between Gender and facility of solar system.

**Observation table**

Solar System							
Gender		Fair	Poor	Good	Very good	Excellent	Total
	Male	9	12	15	14	25	75
	Female	0	9	58	46	26	139
	Total	9	21	73	60	51	214

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 19.236 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} > \chi^2_{tab}$$

**6) To test independence between area and internet facility .**

Ho: There is independence between area and internet facility.

H1: There is dependence between area and internet facility.

**Observation table**

Internet						
	Fair	Poor	Good	Very Good	Excellent	Total
Area	10	39	31	13	14	107
	6	14	13	15	10	58
	16	53	44	28	24	165

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 17.06635788 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} > \chi^2_{tab}$$

**7) To Test Independence between Area and Over all living facility.**

Ho: There is independence between area and over all living facilities.

H1: There is dependence between area and over all living facilities.

**Observation table**

over all living facilities							
Area		Fair	Poor	Good	Very Good	Excellent	Total
	Rural	12	14	95	28	29	178
	Urban	5	2	39	16	10	72
	Total	17	16	134	44	39	250

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 1.424 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} < \chi^2_{tab}$$

### 8) Test For Independence between Gender and Overall Living Facility.

Ho: There is independence between gender and over all living facility.

H1: There is dependence between gender and over all living facility.

#### Observation table

Overall Living Facility							
Gender		Fair	Poor	Good	Very Good	Excellent	Total
	Male	10	12	47	23	19	111
	Female	7	4	87	21	20	139
	Total	17	16	134	44	39	250

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 7.5523 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} < \chi^2_{tab}$$

### 9) Test based on student response about Social Work.

Ho: There is independence between area and social work.

H1: There is dependence between area and social work.

#### Observation table

Social Work							
Area		Fair	Poor	Good	Very Good	Excellent	Total
	Rural	40	17	62	21	21	161
	Urban	12	10	15	6	14	57
	Total	52	27	77	27	35	218

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 7.378 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} < \chi^2_{tab}$$

### 10) Test for Independence between Area and Hostel Environment.

Ho: There is independence between area and Hostel environment.

H1: There is dependence between area and Hostel environment.

#### Observation table

Calm & Peaceful Environment							
Area		Fair	Poor	Good	Very Good	Excellent	Total
	Rural	2	16	68	36	56	178
	Urban	2	3	23	20	24	72
	Total	4	19	91	56	80	250

$$\chi^2_{cal.} = \sum_{i=1}^k \frac{(O_i - e_i)^2}{e_i} = 2.111 \text{ and } \chi^2_{tab} \text{ 4d.f} = 14.86026 \text{ Since, } \chi^2_{cal.} < \chi^2_{tab}$$

## OVER ALL CONCLUSIONS:

From the above investigated study, it is concluded that, Most of the students in rural areas live in hostels. Hostel hosts a large number of degree students. There is strong significance relationship between the results of the parameters (Hostel hygiene, Room facilities, solar system and electricity) for the students often hostels. Most students in boys hostel are dissatisfied with drinking water and it was observe that the hostel has not good mess facility. Maximum number of students would like to have participation in social work. As well as students are not fully satisfied with internet facility provided in hostel campus. Students made good relation with hostel's warden. Most of the hostel students say that hostel climate is healthy. Students are agreed that they get poor sports facilities in hostel campus. We observed no sanitary disposal machine in most of girls hostel. As well as most of girls are not fully satisfied with facility provide at healthy center. The students were not satisfied with service by mess staff. There is no provided Variety of meals. The



hostel management provides newspaper, study room and library to the hostel students. Hostel management need to deliver quality service and offer better hostel facilities in order to improve student's services.

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