ACKNOWLEDGEMENT

We would like to express our special thanks of gratitude to teachers who gave us the golden opportunity to do this wonderful project which also helped us in doing a lot of Research and we came to know about so many new things we are really thankful to all of them.

We would like to express our deepest appreciation to all those who provided us the possibility to complete this report. The completion of this undertaking could not have been completed by partition and assistance of so many people whose names may not all be enumerated. Their contribution are sincerely appreciated and gratefully acknowledged. However the group would like to express their deep appreciation and indebtedness to the following:

Sonia Joshi Mam, Ankita Shah Mam, Aditi Mulay Mam, and head of department Rajshree Umarani Mam for their endless support, kind and understanding spirit during our survey.

We are really thankful to all of them.

ABSTRACT

The Academic performance of students depends on number of socio-economic factors, teacher, student and school related variables .Hence the study was conducted to identify and analyze the factors which affect grades of students during online and offline scenario.

We have taken into consideration most of the factors affecting grades of a student as well as factors affecting one's career. We tried to show the relationships between all these factors and grades by collecting data via Google form. We are having data with max age group of '18-21' And 67.2% of females ,32.8%males.

In this, model is fitted for parameters that affects academic grades by taking marks as dependent variable and factors that affect marks as independent variables. We have fitted two models by taking first online marks and then offline marks as dependent variables. Model is fitted by using R Programming, R Studio, Excel, but finalized our project with Minitab(version 20). Also we checked multicollinearity using SPSS.

Model is with 13 regressors having 51 observations. For model with online marks as response variable and 4 significant regressors, deviance is 42.8690 and chisquare (0.1,47) is 35.08143. For model with offline marks as response variable and 3 significant regressors, deviance is 95.960 and chisquare(0.1,48) is 35.94913.

BRIEF

1.INTRODUCTION

2.INTEREST

3.. GRADING SYSTEM

4.SYNOPSIS OF CAREER

- Student's Hobby.
- Reason for choosing above field & its satisfaction.
- Distance of college
- Online Certified Courses
- Futuristic Characteristics of a Student & Planning Ability.

5.. PARAMETER THAT COUNTS TO STUDENT ACADEMIC GRADE

- Attendance & Student
- Family Stress & Students Performance
- Guidance , Motivation , Inspiration in the life of a Student
- How Sleeping hours impact Student's Efficiency ?
- Infrastructure
- Role of effective Self Study
- Correlation between Parents qualification & student's Performance
- Communication/Discussion & Student's Performance
- Resources in Student's life

6. GRAPHS AND TABLES

- Calculation
- Interpretations And Analysis

7.LIMITATION AND CONCLUSION

9.. BIBLIOGRAPHY

INTRODUCTION

Countries throughout the world have made a lot of efforts to expand education with in their country as they know development can't be achieved without education. But the effort varies from countries to countries. Developed countries like Germany, Britain and France have given first task for education. As a result, they become economically and politically powerful.

Identifying factors that influence students learning and thus achievement continues to be an important. Even though, the government has a made a paramount effort to expand Number of schools, college and universities as well as the enrollment of students at various stages, the quality of Education were remained under question since the inception of modern education still now.

In this project we have seen parameters that counts grades. In order to fit the model we have used various software like R Programming, R Studio, Excel, SPSS but finalized our project with Minitab. Minitab is a software product that helps us to analyze the data. This is designed essentially for the Six Sigma professionals. It provides a simple, effective way to input the statistical data, manipulate that data, identify trends and patterns, and then extrapolate answers to the current issues.

We deal with primary data and hence had to perform some methods before proceeding like finding the significant regressors by comparing two models. After some of such methods we fitted our model.

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WHAT IS INTEREST?

Interest is the feeling of wanting to know or learn about something or someone. Career interests reflect stable preferences for certain work activities and work environments. Identifying your career interests helps you make a well-informed and more strategic career decision. Following your career interests means you're pursuing a career that uses your talents and aligns with your values and preferences.

Why is interest important?

For many people, interest is a driving factor for motivation and happiness in their life. Interest is one of the important parts while choosing a career. When we love what we are doing, we will always put our best performance forward and strive to learn more. Consequently, that will enhance our self-confidence as well. When we pick up the field or area we like and enjoy, we would not crib to study or work in that field rather work harder and perform our best.

. It stated that interest includes effective and cognitive components which are part of individuals' engagement in activities. Therefore, many researches demonstrate that the role of interest is very important for an individual's education as well as career.

SGPA and CGPA grading system

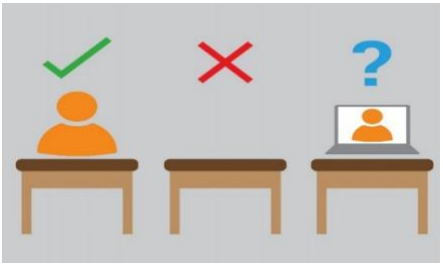
Grading in education is the attempt to apply standardized measurements of varying levels of achievement in a course. Grades can be assigned as letters (usually A through F), as a range, as a percentage, or as a number out of a possible total (often out of 100).In some countries, grades are averaged to create a grade point average (GPA). . GPAs are often calculated for high school, undergraduate, and graduate students, and can be used by potential employers or educational institutions to assess and compare applicants. A cumulative grade point average (CGPA), sometimes referred to as just GPA, is a measure of performance for all of a student's courses.

Different educational boards use different metrics in awarding grades to students, along with the marks obtained in most cases. This grading system is based on the relative position of the student rather than the actual marks, it compares marks of different students and then a grade is given.

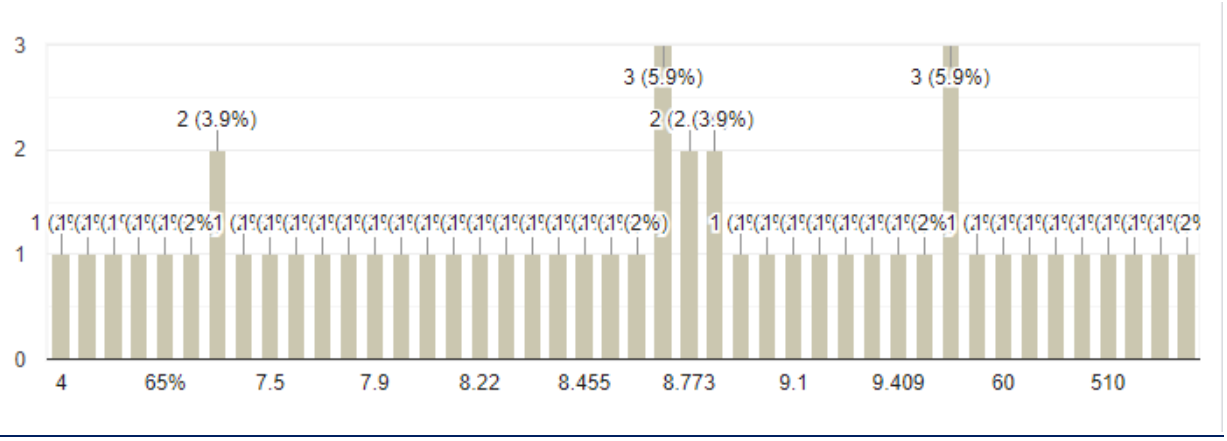
Semester Grade Point Average (SGPA): It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

Online Vs Offline

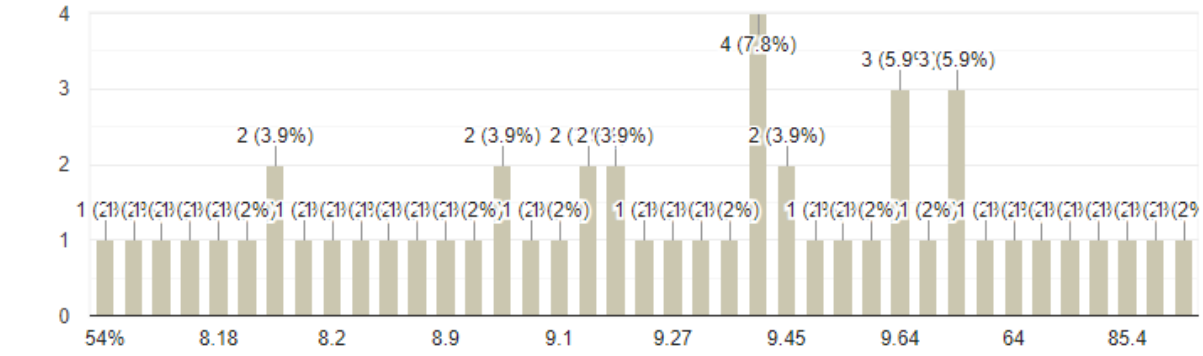
Online means that a computer, device, or a person is connected to a network, and usually this means the Internet. While off-line means the computer, device, or person is not connected to a network. This form of life is called the "new normal". Schools and universities are conducting classes, exams, presentations, viva, etc., all online.While online education is not a new phenomenon, its importance came to light after the pandemic. As a matter of fact, online education has become a flexible instructional method of teaching wherein students can easily gain access to study material in the comfort of their homes. . Online education helps in **time management** within students and provides them access to an unlimited number of educational resources. But at the same time online learning may create a sense of isolation and people need to be more onscreen.



- **SGPA in FY Semester 1 (offline marks)**



SGPA in SY semester 3 (online marks)



From the Above two graphs we can say that , During Offline exams the variation of marks of the students are clearly visible as compared to Online Exams where students have almost same grades .

Description of variables

Variables	
Independent variables	**Scores(Online/Offline)**
Dependent variables	**1) Attendance** **2) Family stress** **3) Motivation and inspiration** **4) Sleeping hours** **5) Communication with peer groups** **6) Self study** **7) Gender** **8) Age** **9) Satisfaction of online/offline teaching method** **10) Mothers Qualification** **11) Fathers Qualification** **12) Infrastructure** **13) Distance of college**

SYNOPSIS OF CAREER

- **Hobby:**

A Hobby is considered to be a regular activity that is done for enjoyment, typically during one's leisure time.Participation in hobbies encourages acquiring substantial skills and knowledge in that area. Hobbies help us grow as a person.All of us are unique, and this is the reason why our hobbies and interests are different. Having a hobby that we enjoy brings us joy and refreshes us. Some other are:

Increases Confidence: It feels great to be skilled and good at something. And this is what that makes us confident. It can take some time to develop our hobby so that we may be able to tell that we are skilled. But, the journey of experiencing our hobby is very rewarding in itself.

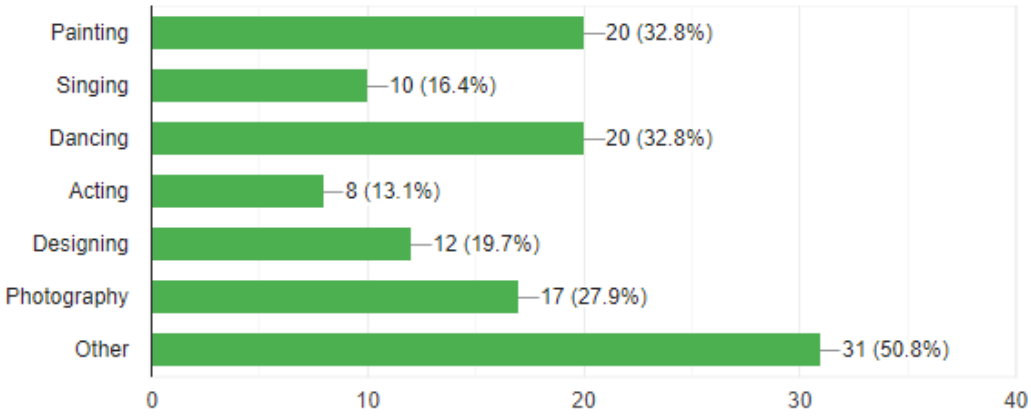
Allows to De-stress: Hobbies give us an opportunity to enhance our life. Hobbies allow us to destress ourself while remaining mentally productive.

Helps Us Socialize: Hobbies may provide an opportunity for us to socialize with people and that can be an additional benefit for our overall well-being.

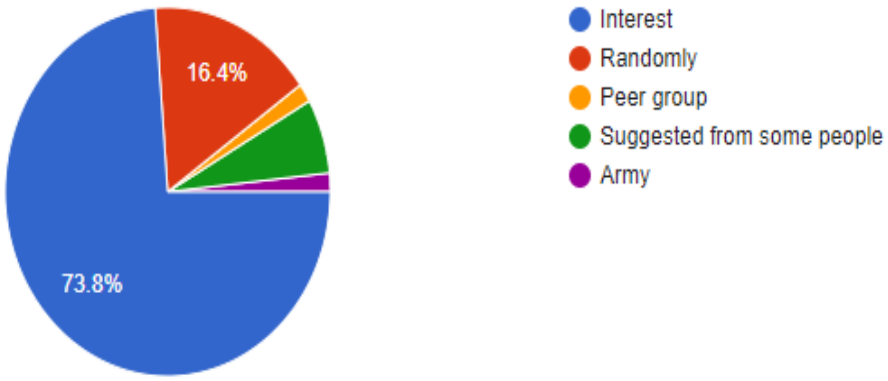
Enhances Our Creativity: Some hobbies require creativity and if we develop creativity through our hobby, it can be beneficial. Creativity can help us experience new things at college and work.

Hobby as a Career: Besides all the benefits mentioned above of having a hobby and practicing it there are some other benefits too. When a student chooses hobby as his/her career, most often it is seen that they are expert in respective field.

- **Hobby/Passion/Interest**



- **Reason for choosing the field and it's satisfaction.**



- **Distance of college**

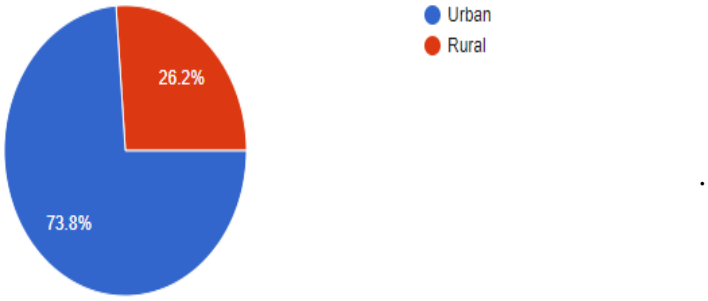
Long commutes make student's faced a lot of challenges that affected their academic performance .Being a commuter in college comes with a lot of responsibility,

- Commuters have to make sure that they will be able to commute to college,

- Adjust to travelling times, while also keeping up with their college work.

NOT BEING ABLE TO SLEEP : I envy the resident students who can simply roll out of bed and walk to class in five minutes. Not to mention they have the luxury of going back to their dorms for a nap.

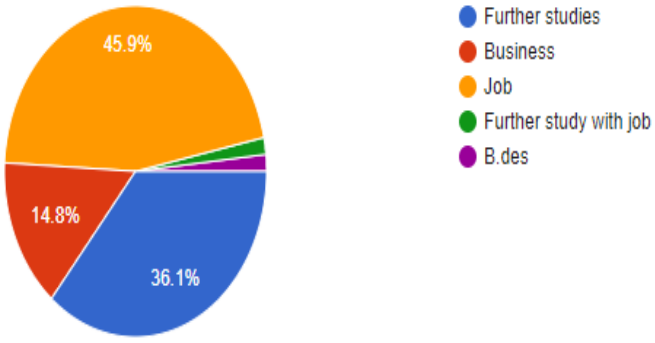
Place:



- **Online Certified Courses**

As University granted commission Guidelines for providing skill based certificates comfort puts students in a hassle-free space to seek knowledge

- Certification course helps on individual to showcase his competency , commitment for the profession , build expertise in his professional area, and helps with job advancement.
- According to a CompTIA study , 91% of student believe IT certifications play a key in the hiring process and are a reliable predictor of a successful employee.

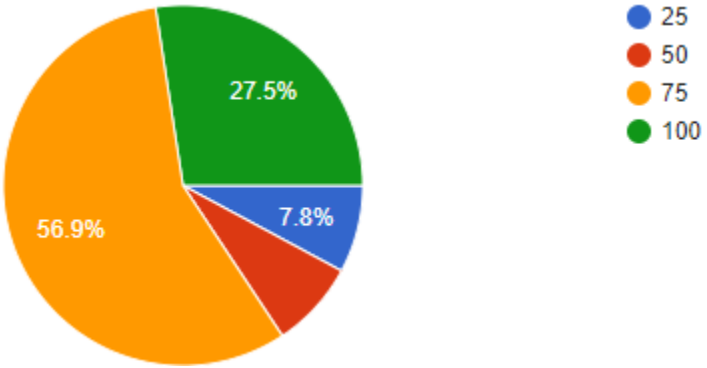


PARAMETERS THAT COUNTS TO STUDENTS ACADEMIC GRADE

- **Attendance & student**

Attendance is basically the action or state of going regularly to or being present at a place or event(which is previously scheduled) . In fact, a meta-analysis has revealed that attendance positively affects both course grades and GPA and is the single strongest predictor of college grades. But in our survey as observation was less so we were not able to see much positive effect Several previous studies have shown that **class attendance is a crucial indicator of academic performance.** Hence the higher the attendance the higher the final grades achieved by the students. As per UGC guidelines,75% attendance is mandatory, whether online or offline.

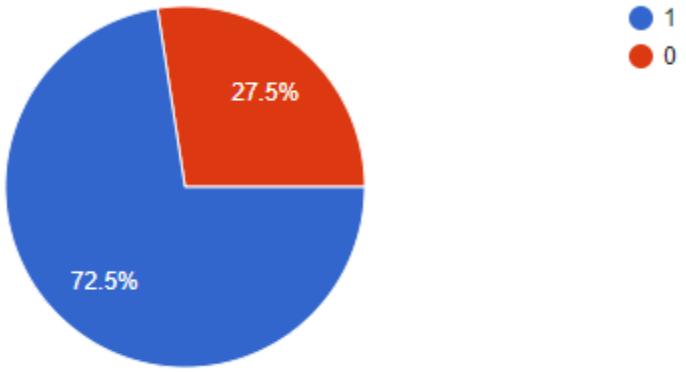
Attendance in class [In %]



- **Family stress and Guidance and student's performance**

College students commonly experience stress because of increased responsibilities, a lack of good time management, changes in eating and sleeping habits, and not taking enough breaks for self-care. Transitioning to college can be a source of stress for most first-year students.

Parents/others guidance(motivation & inspiration) in your current course of preparation (1-Yes & 0-No)



There are five major stressors for college students: academic, personal, family, financial, and future .

- **Academic Stress**

Attending classes, completing the readings, writing papers, managing projects, and preparing for exams all put a heavy burden on students. Certainly one of the keys of dealing with academic stress is having good study habits and a time-management system.

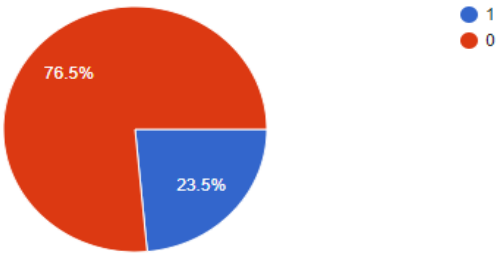
- **Personal Stress**

College is often the first time many students are living independently, and this independence often leads to great stress. You may also face roommate issues and peer pressure to take part in all sorts of activities.If you're struggling with personal issues, the best place to seek help is from your school's counseling center.

- **Family Stress**

Most students go off to college carrying certain expectations from their families. You may also face the stress of family dynamics. Some students are too dependent on their families -- If you're struggling with family issues, the best thing you can do is keep in touch with them on a regular basis, but also consider seeking help from your school's counseling center.

Family Stress [1-Yes & 0-No]



- **Financial Stress**

There's no question that college costs continue to rise, placing increasing pressure on both students and their families to find a way to foot the bill.

About two-thirds of all college students have student loan debt, with an average $27,000 student loan debt load for graduating college seniors nationwide. Besides the stress of having to have the financial resources to pay all these bills, some college students also work part-time.

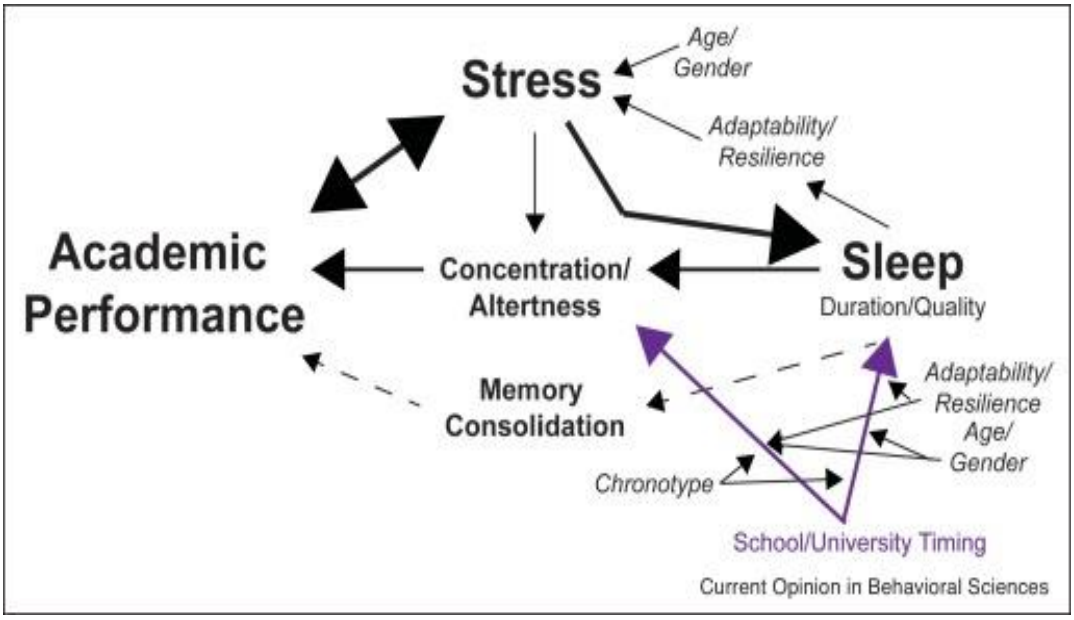
- **Future Stress**

While attending college is about learning and becoming better educated, it is, of course, also about preparing you for a future career. Additional stress comes from wanting a best career. In fact, many students seem to want to avoid the future by taking what we call the "**Peter Pan Syndrome**," in which you go to great lengths to avoid any kind of discussions about the future (and growing up).If you're struggling stress related to career issues, make an appointment with your school's career services office and one or more of your professors.

- **How Sleeping hours impact student's efficiency**

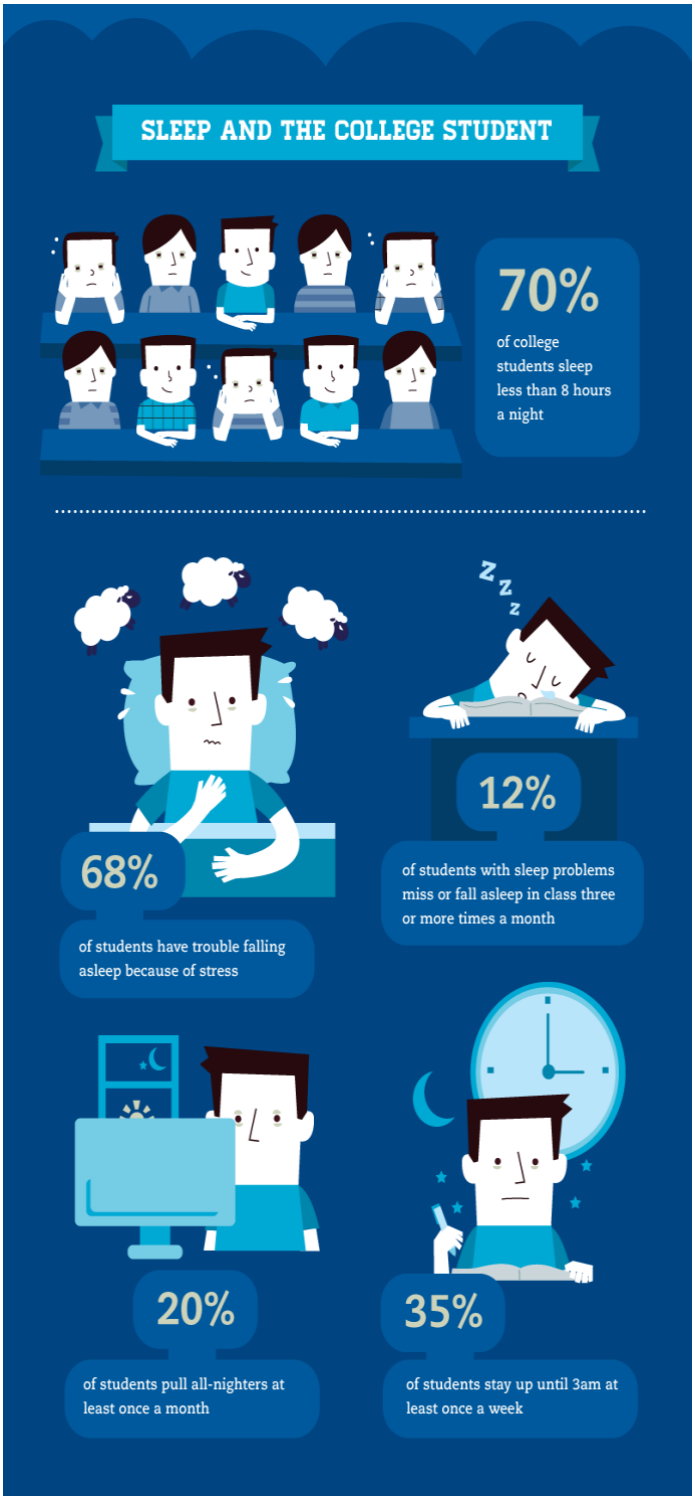
Adequate sleep optimally impacts mental functioning and therefore impacts students performance on examinations and ultimately grades received. Increasing public knowledge of the positive effects of adequate sleep and increasing the proportion of adults who obtain sufficient amounts of sleep to improve health, wellness, productivity, quality of life, and public safety is a national health objective reflected in healthy people .

Cognitive performance is susceptible to inadequate sleep durations, defined as fewer than 7 hours a day for adults. Inadequate sleep decreases general alertness and impairs attention, resulting in slowed cognitive processing. Studies assessing the impact of sleep on academic performance focus primarily on **teens, adolescents, and undergraduate students**. **Does duration of sleep affect students' overall academic performance?** A questionnaire was developed to determine sleep habits, subjective perceptions of one's own sleep quality, and any factors that affect the management of sleep and academic performance in students. **So if your grades are suffering, it might not be your uber-tough professor at fault - it might be your sleep habits!**



A study of college students found that better sleep—specifically, higher quality, longer duration, and greater consistency of sleep—was associated with higher scores on quizzes and midterm exams. The current study, published in *Science of Learning*, used wearable activity trackers to objectively measure students' sleep throughout an entire semester. The trackers recorded both sleep duration, based on the time in which the wearer has not moved, and sleep quality, based on the variability in heart rate that occurs throughout sleep stages. According to a multiple linear regression, sleep duration, quality, and consistency together accounted for 24.44% of the variance in overall grade performance.

Facts and stats about sleep.



Why sleep is essential: it recharges the brain, consolidates learning, releases important hormones and repairs your cells.The body's clock typically works on a 24.2 hour cycle.The national sleep foundation suggests that adults need 7-9 hours of sleep on average.

Monophasic sleep has 5 stages

Stage 1: Lightest stage of sleep: the brain produces high amplitude theta waves.

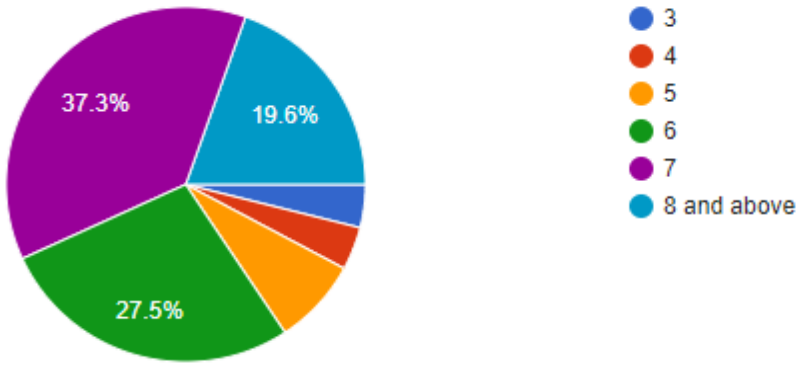
Stage 2: Brain produces rhythmic brain wave activity know as sleep spindles.

Stage 3: Transition between light sleep and very deep sleep.

Stage 4: Slow brain waves known as delta waves are produced. Very deep sleep.

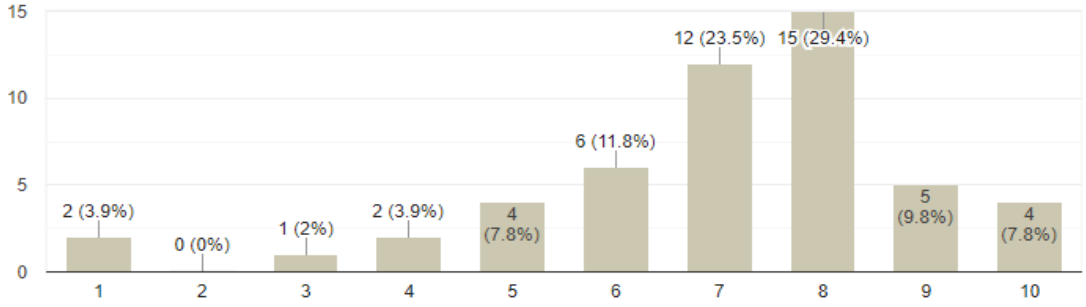
Stage 5: Dreaming occurs in this stage of sleep, also known as REM sleep. Brain and other body systems become more active but muscles further relax. 1-2 hours are spent in REM sleep each night.

Your Total Sleeping Hours (In Hrs)



- **Role of effective Self Study:**

Rate your Self Study



Self-studying is a learning method where students direct their own studying—outside the classroom and without direct supervision. Since students are able to take control of what (and how) they are learning, self-study can be a very valuable way for many students to learn.

How self-study can be done effectively?

- Seeking out resources that provide more information on the topic one is learning about. Books, articles, and educational videos are all highly effective ways to increase understanding of new concepts.
- Every student has his or her preferred study method. Trying different study techniques, like reading books, watching videos, creating mind maps, or some other activity can help them to process the information.
- . It was reported in the media that in the year 2016, 5,539 students (52.4%) out of the 10,576 who got admission to IITs had studied on their own. Those who went to coaching centers comprised 44.5% (4,711) of successful candidates.

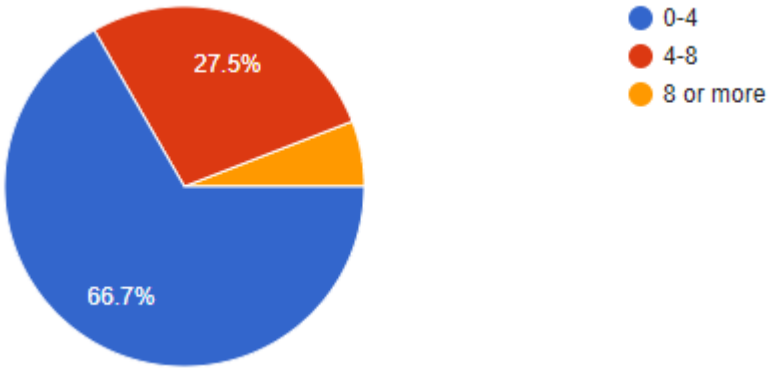
In India, 32% of school children go to tuitions for Maths and Chemistry; while 12% attend extra classes for Accounts!

Hours of Study:

Study time refers to a specific time a student assigns for himself or herself to study in order to acquire knowledge. In any school system, academic performance is the priority to students as well as the teachers.

So, the real question is: **how many hours per day should we study?** The consensus among universities is that for every hour spent in class, students should spend approximately 2-3 hours studying. Many experts say the best students spend between 50-60 hours of studying per week**.** Many studies have been carried out on study time behaviour and students' achievement. The recent ones include that of Logunmakin (2001), Kumar (2002) and Gbore (2006). They all agreed that study time attitude affects strong relationship with academic performance of students while other researchers like Owolabi (1996) and Adeyemo (2005) concluded that students' academic achievement was the outcome of a combination of the study time behaviour and other factors in any course of study. Adeyemo (2005) specifically opined that study time attitude is an exercise that goes beyond merely reading for pleasure.

. **How many Hours do you study (average)**



- **Correlation between parents qualification and students performance**

There is a great need to determine how parental involvement affects student achievement. Such knowledge could inform parenting practices as well as school-based practices for working with parents.However, the literature on parental involvement is “knotty”— complex and sometimes contradictory.

Researchers generally agree that a constellation of familial factors exert significant influence on the educational aspirations and academic achievements of adolescents . Among those salient factors are **parent’s occupation, educational attainment, socioeconomic status, family composition, parental involvement, peer and teacher influence, and adolescent self-efficacy.**

Higher SGPA

Parents who have advanced degrees have shown they value education. Their past achievements become a benchmark for their children to follow as parents’ past pursuits in education may augment structural factors on intergenerational behaviors.

Parents who have not attended college, on the other hand, tend to have less direct knowledge of the economic and social benefits of a postsecondary education. Thus, some of these **IMPACT OF PARENT EDUCATION ON STUDENT SUCCESS** parents may prefer that their children work rather than attend college.

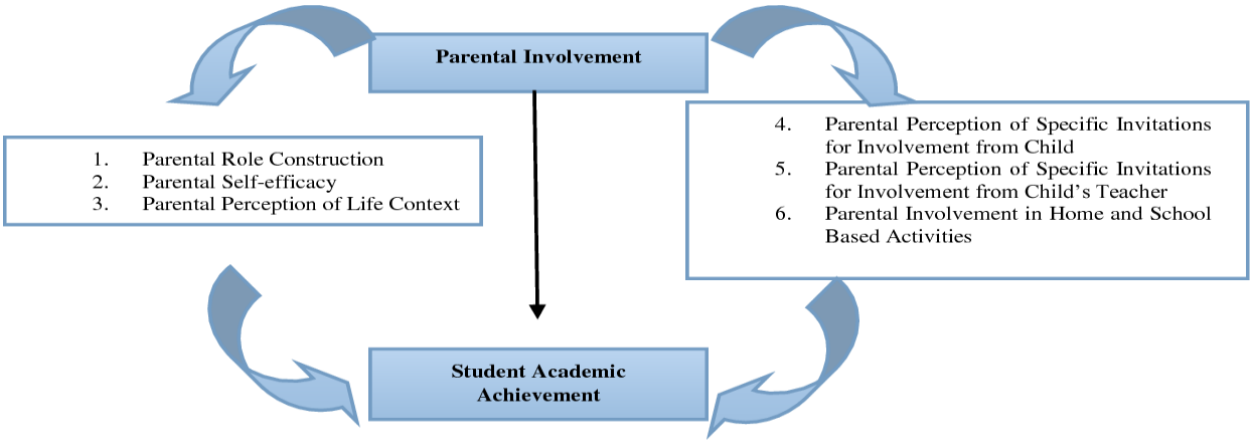
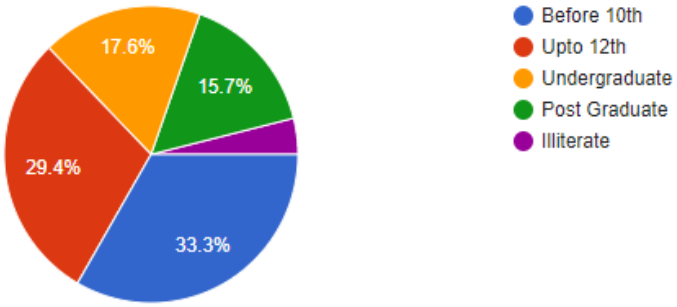
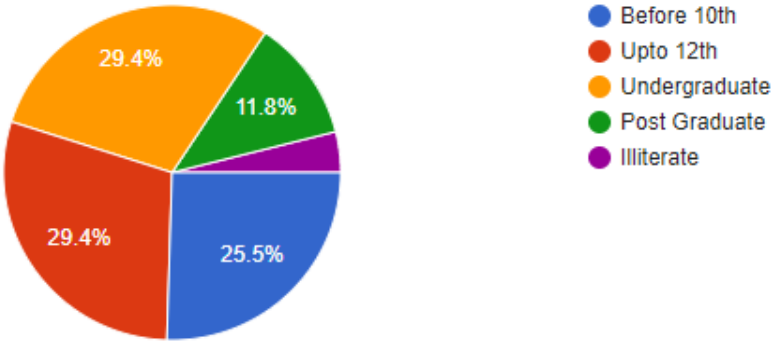


Figure 1 Research conceptual model

Mother's Qualification

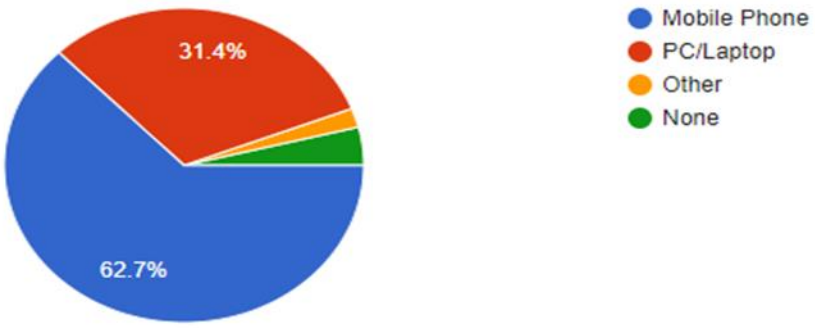


Father's Qualification



- **Resources in Student's life i.e. Infrastructure**

  While we talk quite passionately about Right to Education for every child, an important factor usually takes a backseat in the list of priorities. Requisite infrastructure and staff with adequate quality standards often lag behind in education system.



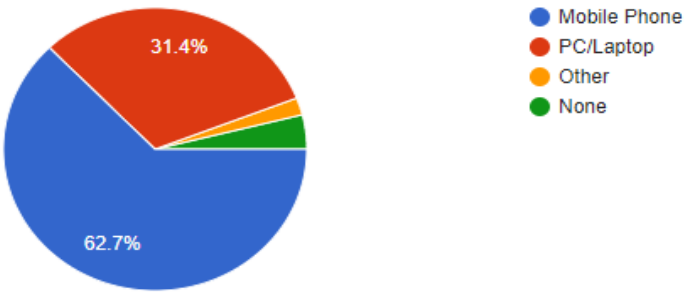
❖ **Educational Infrastructure :**

- Insufficient infrastructure has been a major constraint to poor academic achievement.
- Negative perception of the college's social climate contributes to high absenteeism. **The resulting negative perception of the college's climate, accounted for 70% of the poor academic performance.**

- College building that are in good condition and attractive may signal to students that there is a positive social climate , which in turn **may encourage better attendance.**

It has been a noted fact that teenage girls tend to drop out from schools due to lack of sanitation facilities. According to a Forbes Marshall survey, which looked at sanitation as a whole, almost 23% of girls drop out of school when they start menstruating. In some places, as many as 66% girls skip school during this time and one-third of them eventually drop out.

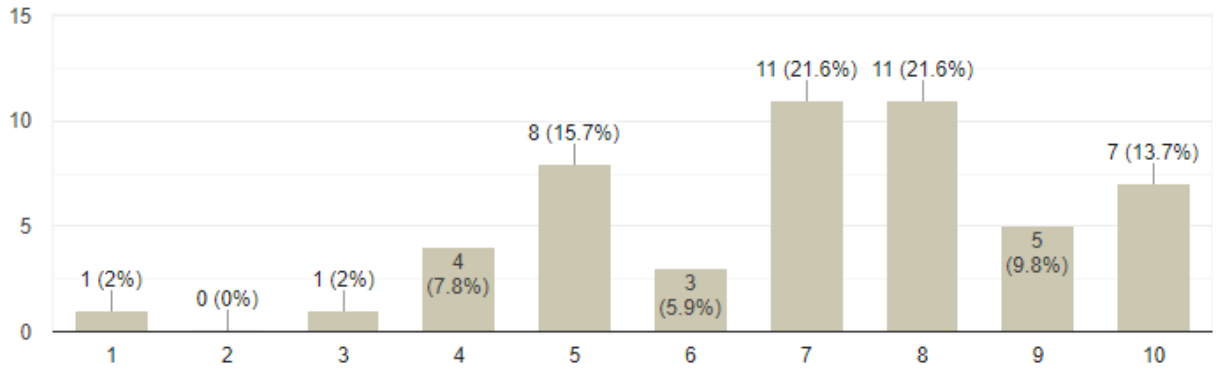
Learning Infrastructure



- **Communication/Discussion & student's performance**

In recent years, great progress has been made in identifying peer effects. Several studies show that the influence of classmates, study or neighborhood peers is an important factor in individual results such as test scores, career choice, etc.For example, this happens when classmates are more skilled and, therefore, the professor can teach better or at a more demanding pace. When a student is disruptive and consumes more of the professors' attention, this affects the rest of his/her classmates, and when peers have more skills other students learn from them. In Colombia, as in other developing countries, private school education generally performs better than public education. This results in severe social segregation in both schools and universities. For this reason, policies that promote the access of low-income students to quality institutions through demand subsidies

How well do you Communicate/Discuss with you peer groups (academics)

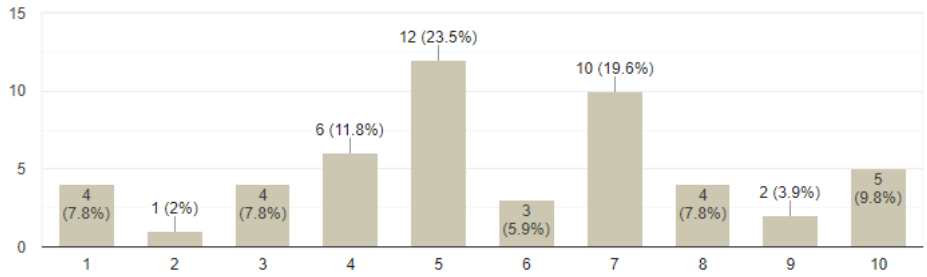


- **Student's level of Satisfaction in academics**

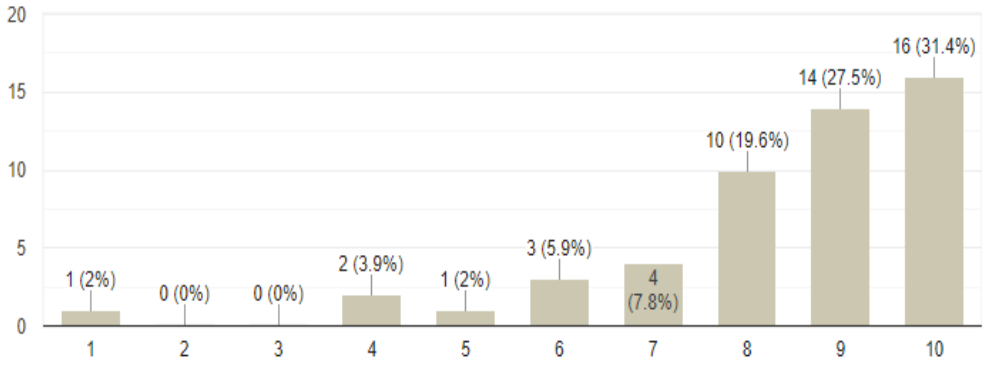
Student's age group 18 to 24. After passing the Higher Secondary Examination , students may enroll in general degree programmes such as degree in arts, commerce, medical or non medical and professional degree programmes such as engineering, law, management or medicine. India's higher education system is the third largest in the world, after China and the United States. In the future, Distance learning is also a feature of the Indian higher education system. The Government has launched Rashtriya Uchchattar Shiksha Abhiyan to provide strategic funding to State higher and technical institutions Some institutions of India, such as the Indian Institutes of Technology (IITs),Indian Institute of Science and University of Mumbai have been globally acclaimed for their standard of undergraduate education in engineering. But in many parts our university system is, in a state of disrepair Students' satisfaction has never been considered as an issue of importance by educational authorities

nor regarded as a matter of survival by higher education institutions. The measurement of student satisfaction can be useful to higher education institutions, to help them to pin point their strengths and identify areas for improvement. Satisfaction ratings go beyond teaching assessments, which have a narrow focus, to include broader aspects of the student learning experience. To grasp the complexity of that learning experience, it is not enough to know the degree to which students are satisfied, it is important to understand the factors that contribute to student satisfaction. The purpose of this study is to identify aspects of the educational experience that are associated with students' overall expression of satisfaction and determining which features of the student experience are most closely related to satisfaction may provide information about actions that can be taken to maintain high levels of satisfaction and improve student learning.. As well, survey respondents rate many aspects of their educational experience, from skill development and personal growth to quality of curriculum, teacher's regularity, their behaviour, parking space in the institute, fee structure of the course , library, Placement, Sports facility.

Rate your satisfaction in Online teaching method



Rate your satisfaction in Offline teaching method



LIMITATIONS

1. The data collected is of small population size.
2. The data is primary data and do not have much variation.
3. Collecting of data through offline survey was not possible at time of collection of data.(due to lockdown)
4. We should have included more factors like teachers involvement in students grades, class size, library, family income etc.

CALCULATION

 # ONLINE

SHEET1

Ordinal Logistic Regression: Grades versus Attendance, Family Stress, Motivation, Sleeping Hours, Communication skills, Self Study, Gender, Age, Satisfaction, Distance House, Mother Qualification, Father Qualification, Learning infrastructure

Link Function: Logit

Response Information

Variable	Value	Count
Grades	1	2
	2	1
	3	8
	4	29
	5	11
	Total	51

Logistic Regression Table

						95% CI	
Predictor	**Coef**	**SE Coef**	**Z**	**P**	**Odds Ratio**	**Lower**	**Upper**
Const(1)	1.36186	6.27340	0.22	0.828			
Const(2)	1.83474	6.25951	0.29	0.769			
Const(3)	3.70621	6.23993	0.59	0.553			
Const(4)	7.19170	6.32529	1.14	0.256			
Attendence	0.0088291	0.0173104	0.51	0.610	1.01	0.98	1.04
Family Stress	0.159166	0.809397	0.20	0.844	1.17	0.24	5.73
Motivation	0.0175649	0.779146	0.02	0.982	1.02	0.22	4.69
Sleeping Hrs	-0.276608	0.284726	-0.97	0.331	0.76	0.43	1.33
Commu. skills	-0.225463	0.171939	-1.31	0.190	0.80	0.57	1.12
Self Study	0.152811	0.221068	0.69	0.489	1.17	0.76	1.80
Gender	-1.10065	0.709082	-1.55	0.121	0.33	0.08	1.34
Age	-0.0411045	0.283531	-0.14	0.885	0.96	0.55	1.67
Satisfaction	0.0885634	0.142680	0.62	0.535	1.09	0.83	1.45
Distance House	1.53827	0.996801	1.54	0.123	4.66	0.66	32.85
Mother Qualification	-0.865554	0.331212	-2.61	0.009	0.42	0.22	0.81
Father Qualification	0.134538	0.328461	0.41	0.682	1.14	0.60	2.18
Learning infrastructure	-4.16498	2.68683	-1.55	0.121	0.02	0.00	3.01

Log-Likelihood = -48.901

Test of All Slopes Equal to Zero

DF	**G**	**P-Value**

13 19.143 0.119

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	165.417	187	0.870
Deviance	97.803	187	1.000

Measures of Association:

(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	Value
Concordant	636	81.0	Somers' D	0.62
Discordant	146	18.6	Goodman-Kruskal Gamma	0.63
Ties	3	0.4	Kendall's Tau-a	0.38
Total	785	100.0		

>qchisq(0.1,38,lower.tail=TRUE)

[1] 27.34295

As deviance is greater than Chisquare(0.1,39),so we conclude **that fitted model is not adequate**

 # Refitting of data with significant regressors

SHEET1

Ordinal Logistic Regression: Online Grades versus Gender, Distance, Mother Qualification, Learning Infrastructure

Link Function: Logit

Response Information

Variable	Value	Count
Online Grades	1	2
	2	1
	3	8
	4	29
	5	11
	Total	51

Logistic Regression Table

						95% CI	
Predictor	**Coef**	**SE Coef**	**Z**	**P**	**Odds Ratio**	**Lower**	**Upper**
Const(1)	-1.30384	1.49310	-0.87	0.383			
Const(2)	-0.834354	1.44233	-0.58	0.563			
Const(3)	0.940319	1.39415	0.67	0.500			
Const(4)	4.26614	1.54773	2.76	0.006			
Gender	-1.52533	0.647163	-2.36	0.018	0.22	0.06	0.77
Distance	1.46524	0.846220	1.73	0.083	4.33	0.82	22.73
Mother Qualification	-0.788165	0.278286	-2.83	0.005	0.45	0.26	0.78
Learning Infrastructure	-2.82491	1.61550	-1.75	0.080	0.06	0.00	1.41

Log-Likelihood = -50.388

Test of All Slopes Equal to Zero

DF	G	P-Value
4	16.169	0.003

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	76.2182	52	0.016
Deviance	42.8690	52	0.813

Measures of Association:

(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	Value
Concordant	593	75.5	Somers' D	0.58
Discordant	136	17.3	Goodman-Kruskal Gamma	0.63
Ties	56	7.1	Kendall's Tau-a	0.36
Total	785	100.0		

qchisq(0.1,47,lower.tail=TRUE)

[1] 35.08143

As deviance is greater than Chisquare(0.1,47) , so we conclude that **fitted model is not adequate**

 # OFFLINE

SHEET1(W2)

Ordinal Logistic Regression: Grades versus Attendance, Family Stress, Motivation, Sleeping Hrs, Commu.skills, Self Study, Gender, Age, Satisfaction, Distance, Mother Qualification, Father Qualification, L Infra

Link Function: Logit

Response Information

Variable	Value	Count
Grades	1	3
	2	1
	3	1
	4	4
	5	16
	6	20
	7	5
	Total	50

* NOTE * 50 cases were used

* NOTE * 1 cases contained missing values or was a case with zero frequency.

Logistic Regression Table

						95% CI	
Predictor	Coef	SE Coef	Z	P	Odds Ratio	Lower	Upper
Const(1)	-3.77524	5.65319	-0.67	0.504			
Const(2)	-3.36519	5.64386	-0.60	0.551			
Const(3)	-3.03546	5.63891	-0.54	0.590			
Const(4)	-2.17688	5.63269	-0.39	0.699			
Const(5)	-0.200856	5.62747	-0.04	0.972			
Const(6)	2.41520	5.62632	0.43	0.668			
Attendence	-0.0255485	0.0195038	-1.31	0.190	0.97	0.94	1.01
Family Stress	0.304347	0.876656	0.35	0.728	1.36	0.24	7.56
Motivation	-0.0447790	0.736169	-0.06	0.951	0.96	0.23	4.05

Sleeping Hrs	-0.0942636	0.259827	-0.36	0.717	0.91	0.55	1.51
Commu.skills	-0.364433	0.188655	-1.93	0.053	0.69	0.48	1.01
Self Study	0.211814	0.199214	1.06	0.288	1.24	0.84	1.83
Gender	-0.863979	0.667525	-1.29	0.196	0.42	0.11	1.56
Age	0.169686	0.247544	0.69	0.493	1.18	0.73	1.92
Satisfaction	0.244959	0.209990	1.17	0.243	1.28	0.85	1.93
Distance	0.975185	0.818479	1.19	0.233	2.65	0.53	13.19
Mother Qualification	-0.435110	0.302315	-1.44	0.150	0.65	0.36	1.17
Father Qualification	0.366563	0.300161	1.22	0.222	1.44	0.80	2.60
L Infra	-2.16881	1.18384	-1.83	0.067	0.11	0.01	1.16

Log-Likelihood = -65.616

Test of All Slopes Equal to Zero

DF	G	P-Value
13	17.642	0.172

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	351.197	281	0.003
Deviance	131.232	281	1.000

Measures of Association:

(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	Value
Concordant	640	71.4	Somers' D	0.44

Discordant	247	27.6	Goodman-Kruskal Gamma	0.44
Ties	9	1.0	Kendall's Tau-a	0.32
Total	896	100.0		

> > qchisq(0.1,38,lower.tail=TRUE)

[1] 27.34295

As deviance is greater than Chisquare(0.1,39) , so we conclude that **fitted model is not adequate**

 # Refitting Of Offline data with significant Regressors

SHEET1(W1)

Ordinal Logistic Regression: Offline Grades versus Communication skills, Mother Qualification, Learning Infrastructure

Link Function: Logit

Response Information

Variable	Value	Count
Offline Grades	1	3
	2	1
	3	1
	4	4
	5	16
	6	21

7	5
Total	51

Logistic Regression Table

						95% CI	
Predictor	**Coef**	**SE Coef**	**Z**	**P**	**Odds Ratio**	**Lower**	**Upper**
Const(1)	0.0494902	1.25299	0.04	0.968			
Const(2)	0.398629	1.23364	0.32	0.747			
Const(3)	0.677391	1.22653	0.55	0.581			
Const(4)	1.42013	1.23097	1.15	0.249			
Const(5)	3.08506	1.28863	2.39	0.017			
Const(6)	5.50110	1.40919	3.90	0.000			
Communication skills	-0.240809	0.131770	-1.83	0.068	0.79	0.61	1.02
Mother Qualification	-0.382684	0.240610	-1.59	0.112	0.68	0.43	1.09
Learning Infrastructure	-1.50684	0.787562	-1.91	0.056	0.22	0.05	1.04

Log-Likelihood = -71.460

Test of All Slopes Equal to Zero

DF	**G**	**P-Value**
3	7.757	0.051

Goodness-of-Fit Tests

Method	**Chi-Square**	**DF**	**P**
Pearson	138.155	147	0.687
Deviance	95.960	147	1.000

Measures of Association:

(Between the Response Variable and Predicted Probabilities)

			Summary	
Pairs	**Number**	**Percent**	**Measures**	**Value**

Concordant	602	65.0	Somers' D	0.33
Discordant	301	32.5	Goodman-Kruskal Gamma	0.33
Ties	23	2.5	Kendall's Tau-a	0.24
Total	926	100.0		

> qchisq(0.1,48,lower.tail=TRUE)

[1] 35.94913

As deviance is greater than Chisquare(0.1,39) , so we conclude that **fitted model is not adequate**

CONCLUSIONS

1. **For Online**:
    - **Fitting of Model with 13 Regressors**

      n = number of observation is 51

      p= number of regressors is 13

      Deviance = 97.803

      Chisquare(0.1,38) = 27.34295

    - **Fitting of Model with 4(significant) Regressors**

      n = number of observation is 51

      p= number of regressors is 4

      Deviance = 42.8690

      Chisquare(0.1,47)= 35.08143

2. **For Offline:**
    - **Fitting of Model with 13 Regressors**

      n = number of observation is 51

      p= number of regressors is 13

Deviance = 131.232

Chisquare(0.1,38) = 27.34295

- **Fitting of Model with 3(significant) Regressors**

  n = number of observation is 51

  p= number of regressors is 3

  Deviance = 95.960

  Chisquare(0.1,48) = 35.94913

  Therefore, we conclude that usually we observe that this parameters (used in this fitting) has effect on score in some or the other way. But as our population size is too small and due to other limitations also get that for offline communication skills,mother qualification, learning infrastructure are affecting the grades of students.And forr online gender, distance of college from home,mothers qualification and learning infrastructure affect the grades on students.

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