

Project Report

On

"A Study on the Correlation Between Sleep Duration, Study Hours, Part Time Job Hours, Playing and Pleasure Time and Academic Performance in University Students"



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Chapter 1: Introduction

1.1 Introduction

University students frequently deal with a range of demands that may have an impact on their academic achievement, such as juggling their obligations to study, socialize, and take care of themselves. The amount of sleep and study time are two of these variables that are commonly mentioned as having a significant impact on student achievement. While study time has historically been associated with academic performance sleep is essential for cognitive processes like memory consolidation, attention, and problem-solving. Even with these established variables, there is still interest in and research being done to determine the precise relationship between university students' academic performance, study habits, and sleep.

The purpose of this study is to investigate the relationship between university students' academic performance, study hours, and sleep duration. In order to better understand how these factors interact and affect academic results, the research will examine student data from several departments and academic years.

1.2 Background

Sleep is essential to a student's general health and academic achievement. Lack of sleep has been shown to have a detrimental effect on cognitive functions such as learning ability, memory recall, and focus. Due to a variety of stressors, such as deadlines, tests, and social obligations, university students in particular are known to suffer from sleep deprivation. According to a study by, students who reported getting too little sleep performed worse academically, indicating that sleep is essential for success.

Few research have looked at the combined effects of sleep and study hours on academic achievement, despite the obvious relevance of both. Thus, by examining sleep and study patterns in connection to university students' academic performance, this study will add to the body of knowledge already in existence.

1.3 Objectives

- To examine the relationship between sleep duration and academic performance
- To analyze the effect of study hours on academic performance
- To analyze the effect of part time job on academic performance
- To analyze the effect of playing and pleasure on academic performance
- To investigate the combined impact of sleep quality and study hours on academic success
- To identify differences in academic performance across various departments (FINANCE, ACCOUNTING, MARKETING, MANAGEMENT)

- To assess the impact of academic year on study habits and academic performance

By meeting these objectives, this study will provide valuable insights into how sleep and study behaviors influence academic achievement among university students.

Chapter 2: Data Representation

2.1 Dataset

The observed data table is shown here.

Student ID	Age	Department	Year of Study	Sleep Duration (hours/night)	Sleep Quality (1-5)	Part Time Job	Playing and Pleasure	Study Hours/Week	Recent Grades (%)
U1	20	FINANCE	1st Yea	5	3	4	2	10	65
U2	21	ACCOUNTING	2nd Yea	5	3	3	1	15	70
U3	22	MARKETING	3rd Yea	7	5	2	2	20	85
U4	23	MANAGEMENT	4th Yea	4	2	3	3	8	55
U5	20	FINANCE	1st Yea	6	4	4	2	12	75
U6	22	ACCOUNTING	2nd Yea	5	3	3	3	14	60
U7	21	MARKETING	3rd Yea	8	5	2	4	18	90
U8	23	MANAGEMENT	4th Yea	7	4	4	2	10	80
U9	22	FINANCE	1st Yea	6	3	4	1	15	72
U10	24	ACCOUNTING	2nd Yea	4	2	3	3	9	50
U11	20	MARKETING	3rd Yea	7	5	2	4	20	88
U12	21	MANAGEMENT	4th Yea	8	4	2	3	22	92
U13	22	FINANCE	1st Yea	5	3	2	3	11	68
U14	23	ACCOUNTING	2nd Yea	6	4	4	3	16	74
U15	24	MARKETING	3rd Yea	7	5	3	3	21	89
U16	20	MANAGEMENT	4th Yea	4	2	4	2	7	58
U17	22	FINANCE	1st Yea	8	5	2	2	19	87

U18	21	ACCOUNTING	2nd Year	6	4	3	1	13	65
U19	23	MARKETING	3rd Year	5	3	2	3	14	70
U20	24	MANAGEMENT	4th Year	7	5	4	4	18	84
U21	20	FINANCE	1st Year	5	3	2	2	10	65
U22	21	ACCOUNTING	2nd Year	6	4	3	4	15	70
U23	22	MARKETING	3rd Year	7	5	4	3	20	85
U24	23	MANAGEMENT	4th Year	4	2	3	2	8	55
U25	20	FINANCE	1st Year	6	4	2	1	12	75
U26	22	ACCOUNTING	2nd Year	5	3	4	4	14	60
U27	21	MARKETING	3rd Year	8	5	3	3	18	90
U28	23	MANAGEMENT	4th Year	7	4	3	2	10	80
U29	22	FINANCE	1st Year	6	3	4	3	15	72
U30	24	ACCOUNTING	2nd Year	4	2	4	2	9	50
U31	20	MARKETING	3rd Year	7	5	2	4	20	88
U32	21	MANAGEMENT	4th Year	8	4	2	3	22	92
U33	22	FINANCE	1st Year	5	3	4	4	11	68
U34	23	ACCOUNTING	2nd Year	6	4	3	3	16	74

U35	24	MARKETING	3rd Year	7	5	3	4	21	89
U36	20	MANAGEMENT	4th Year	4	2	2	3	7	58
U37	22	FINANCE	1st Year	8	5	2	4	19	87
U38	21	ACCOUNTING	2nd Year	6	4	4	2	13	65
U39	23	MARKETING	3rd Year	5	3	3	3	14	70
U40	24	MANAGEMENT	4th Year	7	5	4	4	18	84

2.2 Images Related to This Topic

2.2.1 Image 1: Sleeping Duration and Sleep Quality

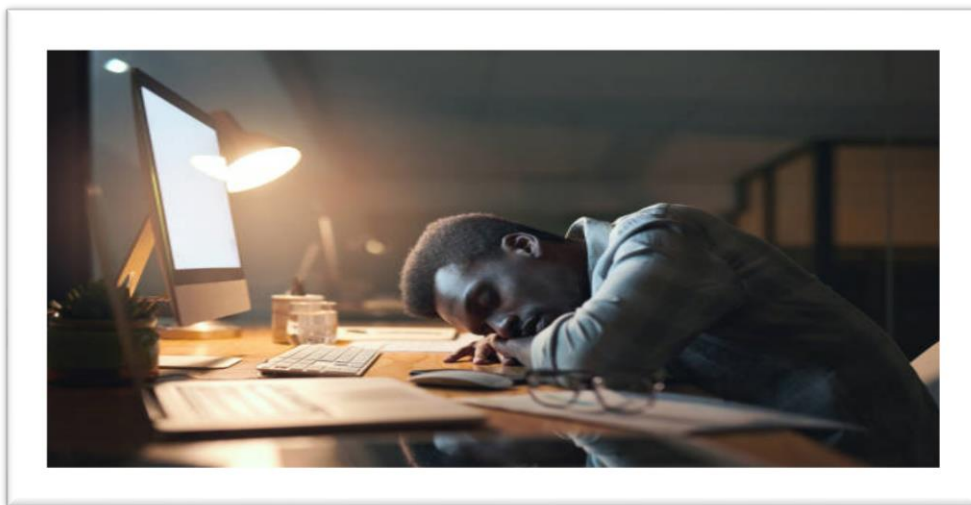


Figure 1: Importance of sleep on University Students

Adequate sleep duration and quality are essential for university students' academic performance, cognitive function, and overall well-being. Insufficient sleep impairs memory, concentration, and problem-solving skills, leading to decreased productivity and poor academic outcomes. Quality sleep also supports emotional regulation, reducing stress, anxiety, and depression, which are common among students. Additionally, a well-rested body enhances immune function, preventing illness that could disrupt studies. Poor sleep habits, such as irregular sleep schedules or excessive

screen time, can lead to chronic sleep deprivation, negatively impacting both mental and physical health. Prioritizing consistent sleep patterns, avoiding stimulants before bedtime, and creating a conducive sleep environment can significantly improve students' well-being, academic success, and long-term health.

2.2.2 Image 2: Part Time Job of University Students

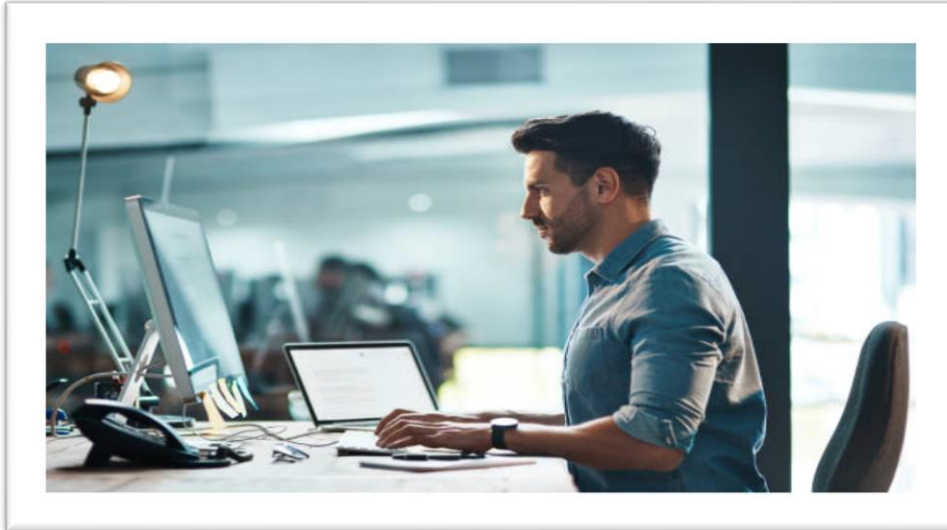


Figure 2: Importance of part time job on University Students

Part-time jobs are crucial for university students as they provide financial support, helping to cover tuition and living expenses. They also enhance time management, responsibility, and work ethics, preparing students for future careers. Gaining practical experience boosts their resumes and employability. Additionally, part-time work fosters independence and confidence while improving social and communication skills. Balancing academics and work teaches discipline, making students more adaptable and resilient in real-world scenarios.

2.2.3 Image 3: Playing and Pleasure of University Students



Figure 3: Importance of playing and pleasure on University Students

Part-time jobs are crucial for university students as they provide financial support, helping to cover tuition and living expenses. They also enhance time management, responsibility, and work ethics, preparing students for future careers. Gaining practical experience boosts their resumes and employability. Additionally, part-time work fosters independence and confidence while improving social and communication skills. Balancing academics and work teaches discipline, making students more adaptable and resilient in real-world scenarios.

2.2.4 Image 4: Studying of University Students



Figure 4: Importance of Sleep on University Students

Studying is crucial for university students as it builds knowledge, enhances critical thinking, and prepares them for future careers. It improves problem-solving skills, time management, and discipline, fostering personal and professional growth. Consistent studying leads to better academic performance, increased confidence, and deeper understanding of subjects. It also helps students develop research and analytical skills essential for success in any field. Ultimately, studying empowers students to achieve their goals and contribute meaningfully to society.

Chapter 3: Data Analysis

3.1 Demographic Data:

The dataset comprises 20 students from four departments: FINANCE, ACCOUNTING, MARKETING and MANAGEMENT with details about their age, year of study, sleep habits, part time job, playing for pleasure study hours per week, and recent grades. The average age is 21.9 years, spanning from 20 to 24 years, reflecting students across all academic years. On average, students sleep 6.05 hours per night, with durations ranging from 4 to 8 hours. Sleep quality, rated on a 1-5 scale, varies across individuals, often correlating with better grades. Students study an average of 14.84 hours per week, with weekly study times ranging from 7 to 22 hours. The average recent grade is 74.32%, with individual performances ranging from 50% to 92%. Department-wise, FINANCE students tend to achieve higher grades, likely due to better sleep quality and longer study hours, while ACCOUNTING students exhibit variability in both sleep and grades. MARKETING and MANAGEMENT students show moderate performance with balanced habits. Generally, higher grades are associated with better sleep quality, longer study hours, and sufficient sleep duration. The analysis suggests that balanced sleep and study habits significantly influence academic success.

3.1.1 Visualization of Demographic Data

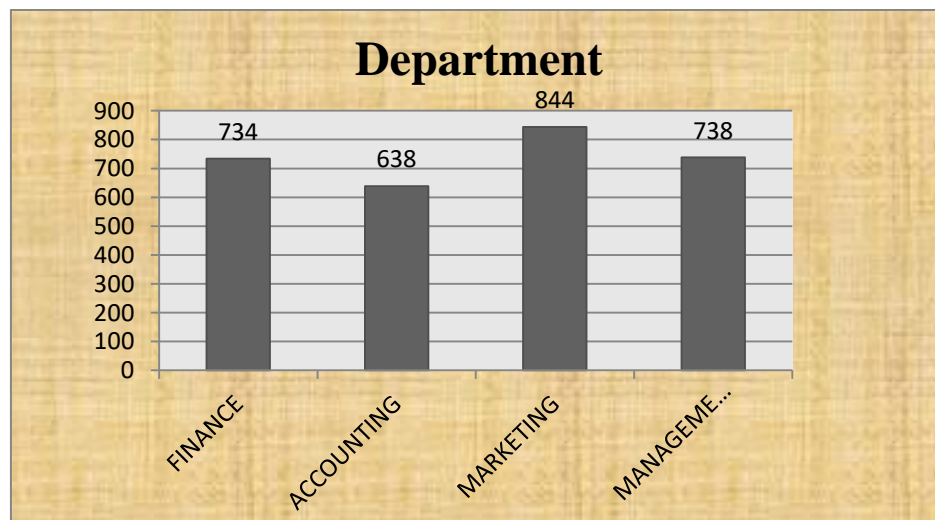


Figure 5: Departmental total observation

This is the demographic data of Department of the students under observation.

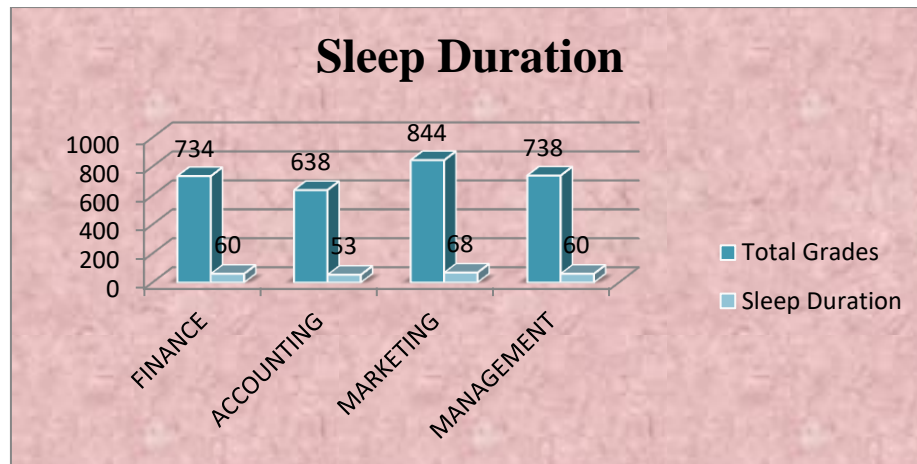


Figure 6: Sleep duration of total students

This is the demographic data of Sleep Duration and Department of the students under observation.



Figure 7: Sleep quality of total students

This is the demographic data of Sleep Quality and Department of the students under observation.

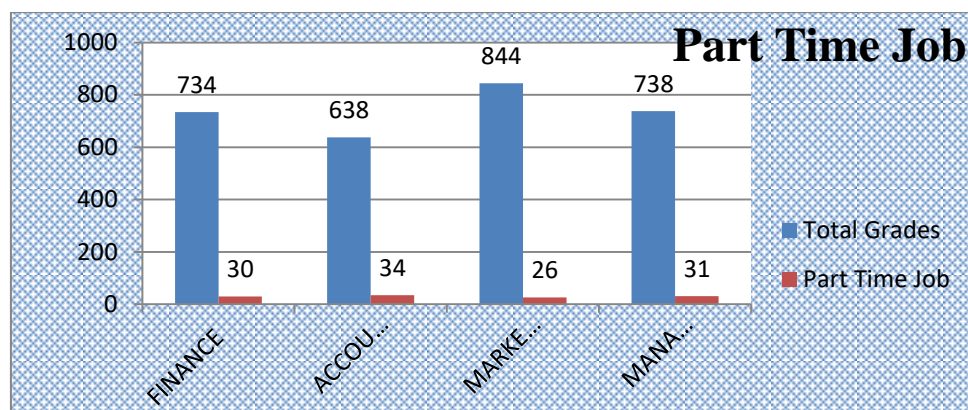


Figure 8: Part time job of total students

This is the demographic data of Part Time Job and Department of the students under observation.

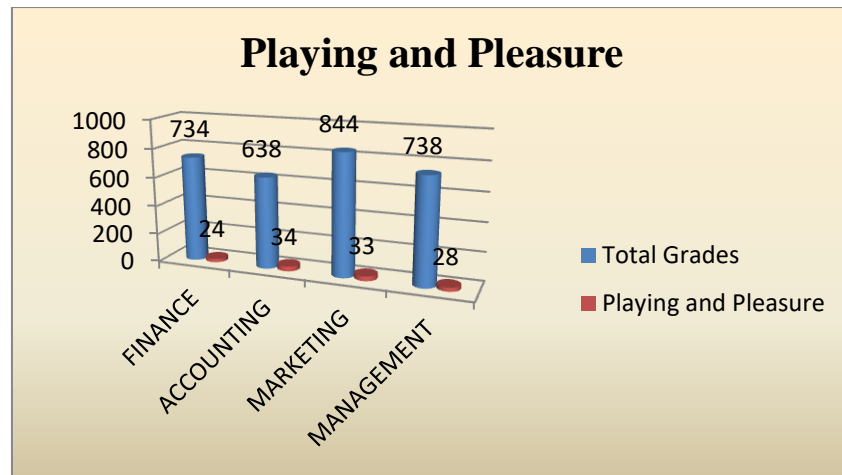


Figure 9: Playing and pleasure of total students

This is the demographic data of Playing and Pleasure and Department of the students under observation.

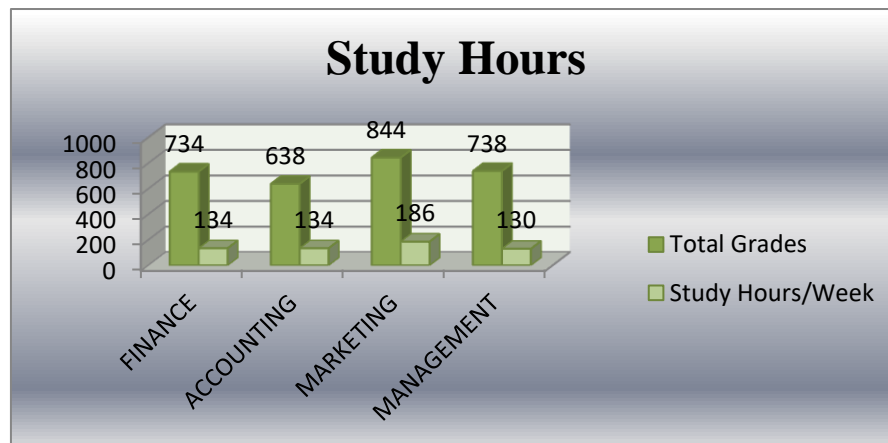


Figure 10: Studying hours/week of total students

This is the demographic data of Study Hours/Week and Department of the students under observation.

3.2 Trend Analysis

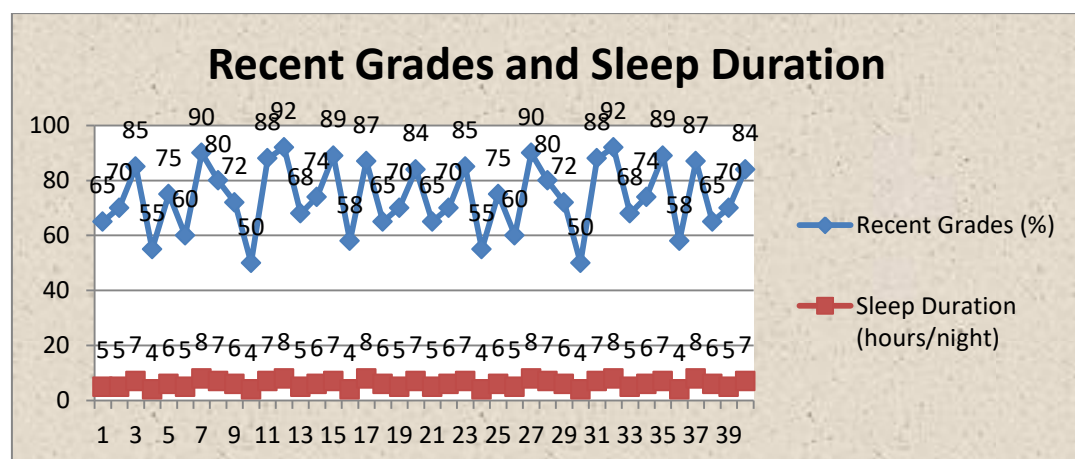


Figure 11: Trend between sleep duration and recent grades

There is a positive trend between the two variables that means if sleep duration increases the grades increases as well.

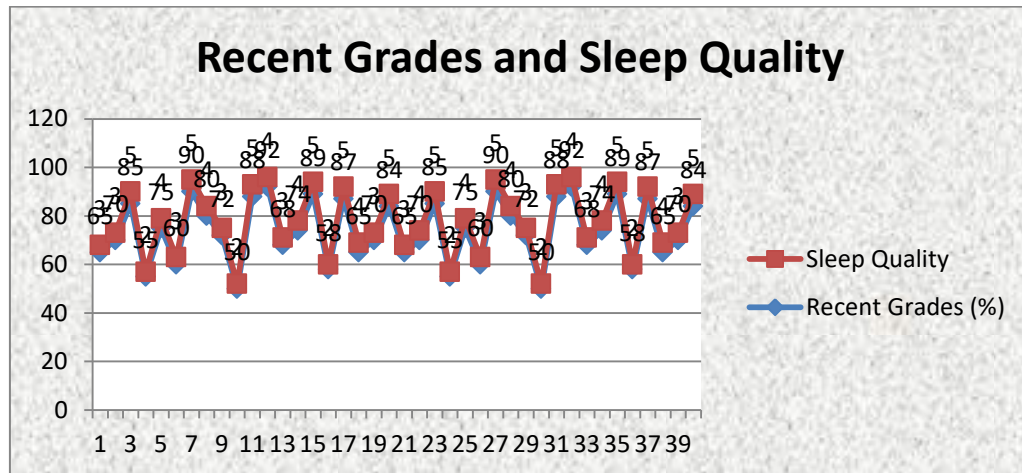


Figure 12: Trend between sleep quality and recent grades

There is a positive trend between the two variables that means if sleep quality increases the grades increases as well.

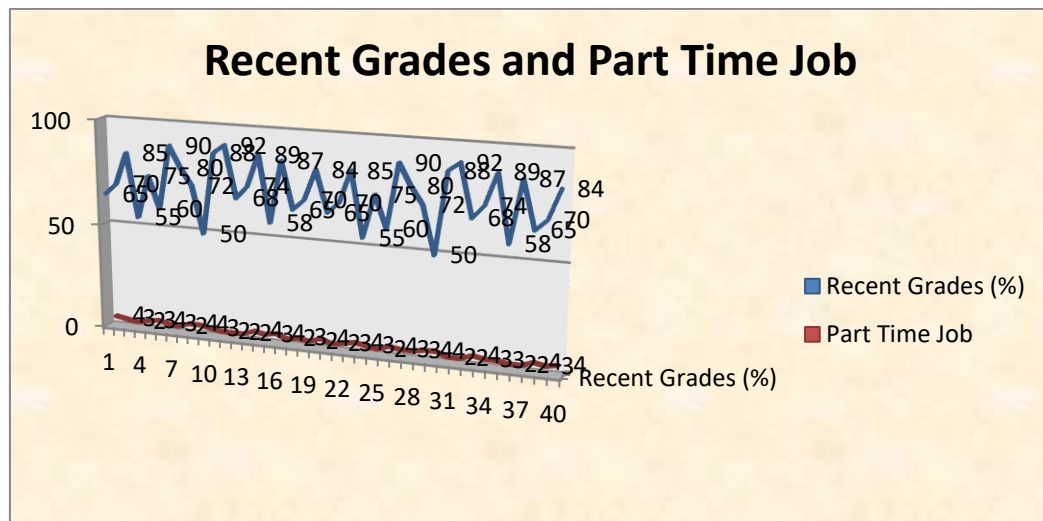


Figure 13: Trend between part time job and recent grades

There is a positive trend between the two variables that means if sleep part time job increases the grades increases as well.

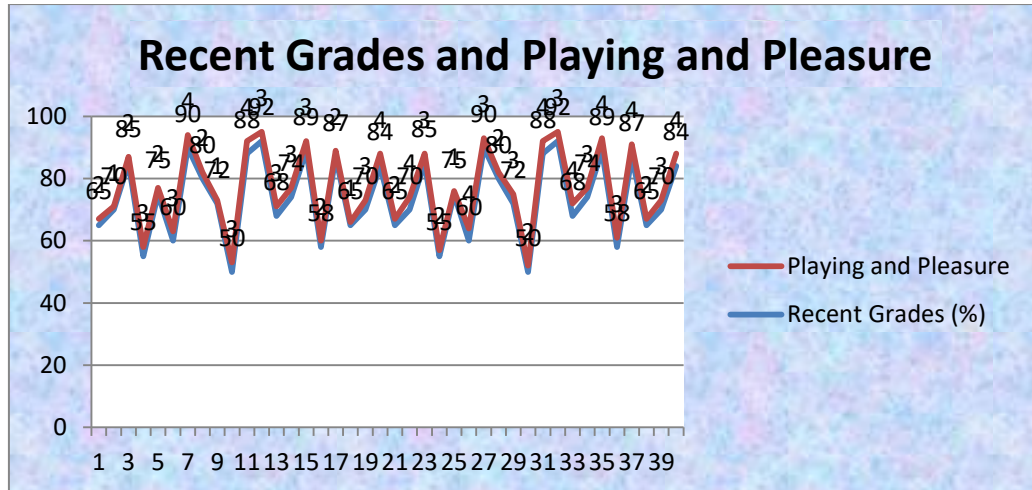


Figure 14: Trend between sleep duration and recent grades

There is a positive trend between the two variables that means if playing and pleasure increases the grades increases as well.

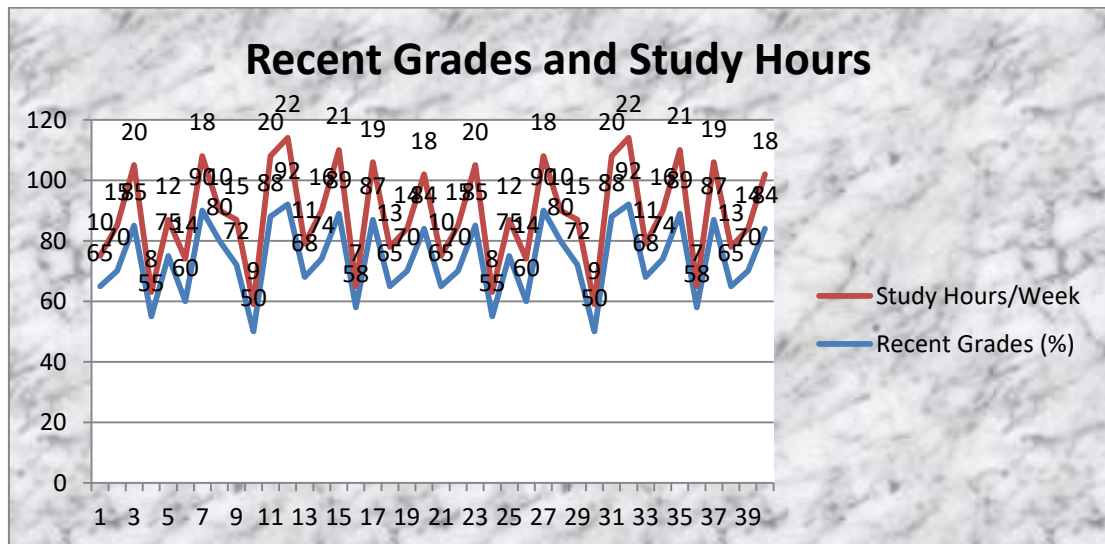


Figure 15: Trend between study hours and recent grades

There is a positive trend between the two variables that means if study hours increases the grades increases as well.

Chapter 4 : Result and Conclusion

4.1 Result

The analysis of the dataset reveals strong positive relationships between sleep habits, study hours, and academic performance. Sleep duration shows the highest correlation with recent grades at 0.9699, indicating that students who sleep longer tend to perform better academically. Sleep quality also has a strong positive correlation with grades (0.9177), emphasizing the importance of restful and high-quality sleep for academic success. Part time job also has a strong positive correlation with grades (0.7911), emphasizing the importance of peaceful and high-quality sleep for academic success with financial support. Playing with pleasure has a strong positive correlation with grades (0.6599), emphasizing the importance of restful and high-quality sleep for academic success. Study hours per week display a robust but slightly weaker correlation (0.8760) with grades, suggesting that while consistent study routines contribute to better performance, their impact is not as pronounced as sleep factors. Department-wise, FINANCE students tend to achieve higher grades, possibly due to better-managed sleep and study routines, while ACCOUNTING students exhibit greater variability in both habits and performance. MARKETING and MANAGEMENT students maintain moderate results, reflecting balanced approaches to sleep, part time job, playing and study. Overall, the data highlights that both sleep, part time job, playing with pleasure and study habits significantly influence academic outcomes, with sleep having a slightly stronger impact.

4.2 Conclusion

The study reveals a significant correlation between sleep duration, study hours, part-time job hours, leisure activities, and academic performance in university students. Sufficient sleep and balanced study hours positively impact academic success, while excessive part-time work and excessive leisure time may hinder performance. A well-managed schedule that prioritizes adequate rest, focused study, and moderate recreation leads to better academic outcomes. Thus, students should adopt effective time management strategies to optimize their academic performance while maintaining overall well-being.

References

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