Project Report

On

"A Study on the Correlation Between Social Media Usage, Physical Activity, and Academic Performance in University Students"

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Chapter 1 : Introduction

1.1 Introduction

University students today navigate a digital landscape where social media and physical activity compete for their time, potentially impacting academic performance. Social media platforms, while offering connectivity, may distract from study commitments (Abdullah Al-Maruf, 2022). Conversely, physical activity is linked to enhanced cognitive function, stress reduction, and improved focus (Gurney JJ, 1995). Despite these dynamics, the interplay between social media usage, physical activity, and academic outcomes remains understudied. This research investigates these relationships to provide actionable insights for students and educators.

1.2 Background

Excessive social media use is associated with reduced academic engagement and lower grades (Hassan, 27 May 2015). Studies suggest that students spending over 3 hours daily on social media exhibit poorer academic performance (Hassan, 27 May 2015). Conversely, regular physical activity correlates with better memory retention and problem-solving skills (Hugo,G.J., 1992). University students, however, often struggle to balance these factors due to academic pressures and time constraints. This study bridges the gap by analyzing how social media habits and physical activity jointly influence academic success. (Ishtiaque, 2011).

1.3 Objectives
- To examine the relationship between social media usage and academic performance.
- To analyze the effect of physical activity on academic performance.
- To investigate the combined impact of social media usage and physical activity on grades.
- To identify differences in academic performance across departments (CSE, STAT, BBA, LAW).
- To assess the impact of academic year on social media habits and physical activity.

Chapter 2: Data Representation

2.1 Dataset

Table 1: Dataset of the students

Student ID	Age	Department	Year of Study	Social Media (hrs/day)	Physical Activity (hrs/week)	Recent Grades (%)
U1	19	CSE	1st Year	5.2	3.5	68
U2	20	STAT	2nd Year	7.1	1.0	55
U3	21	BBA	3rd Year	3.0	8.5	88
U4	22	LAW	4th Year	8.5	0.0	50
U5	20	CSE	1st Year	4.0	5.0	75
U6	23	STAT	2nd Year	6.5	2.0	60
U7	21	BBA	3rd Year	2.5	10.0	92
U8	24	LAW	4th Year	9.0	0.5	48
U9	19	CSE	1st Year	4.5	6.0	80
U10	20	STAT	2nd Year	7.5	1.5	58
U11	22	BBA	3rd Year	1.8	12.0	95
U12	21	LAW	4th Year	3.5	4.0	78
U13	20	CSE	1st Year	6.0	2.5	65
U14	19	STAT	2nd Year	5.5	3.0	70

U15	23	BBA	3rd Year	2.0	9.0	89
U16	24	LAW	4th Year	8.0	0.0	52
U17	21	CSE	1st Year	3.2	7.5	85
U18	20	STAT	2nd Year	4.8	4.0	72
U19	22	BBA	3rd Year	1.5	11.0	90
U20	23	LAW	4th Year	7.8	1.0	54
U21	19	CSE	1st Year	5.0	4.5	76
U22	20	STAT	2nd Year	6.2	2.0	62
U23	21	BBA	3rd Year	2.8	9.5	87
U24	24	LAW	4th Year	9.5	0.0	46
U25	20	CSE	1st Year	3.5	6.5	82
U26	22	STAT	2nd Year	5.5	3.5	68
U27	23	BBA	3rd Year	1.0	14.0	94
U28	21	LAW	4th Year	4.0	3.0	70
U29	19	CSE	1st Year	6.5	2.0	60
U30	20	STAT	2nd Year	7.0	1.0	56
U31	21	BBA	3rd Year	2.2	10.5	91
U32	22	LAW	4th Year	8.2	0.5	51
U33	23	CSE	1st Year	4.2	5.5	77

U34	20	STAT	2nd Year	5.0	4.0	73
U35	21	BBA	3rd Year	3.8	8.0	84
U36	24	LAW	4th Year	9.2	0.0	47
U37	20	CSE	1st Year	2.5	7.0	88
U38	21	STAT	2nd Year	6.8	1.5	58
U39	22	BBA	3rd Year	1.2	13.0	93
U40	23	LAW	4th Year	7.5	0.0	53
U41	19	CSE	1st Year	5.5	3.0	69
U42	20	STAT	2nd Year	4.5	5.0	75
U43	21	BBA	3rd Year	2.6	9.0	86
U44	24	LAW	4th Year	10.0	0.0	45
U45	20	CSE	1st Year	3.0	8.0	83
U46	22	STAT	2nd Year	5.8	2.5	64
U47	23	BBA	3rd Year	1.8	12.5	96
U48	21	LAW	4th Year	6.0	2.0	63
U49	19	CSE	1st Year	7.2	1.0	57
U50	20	STAT	2nd Year	8.0	0.5	49

2.2 Images Related to My Topic

2.2.1 Image 1:

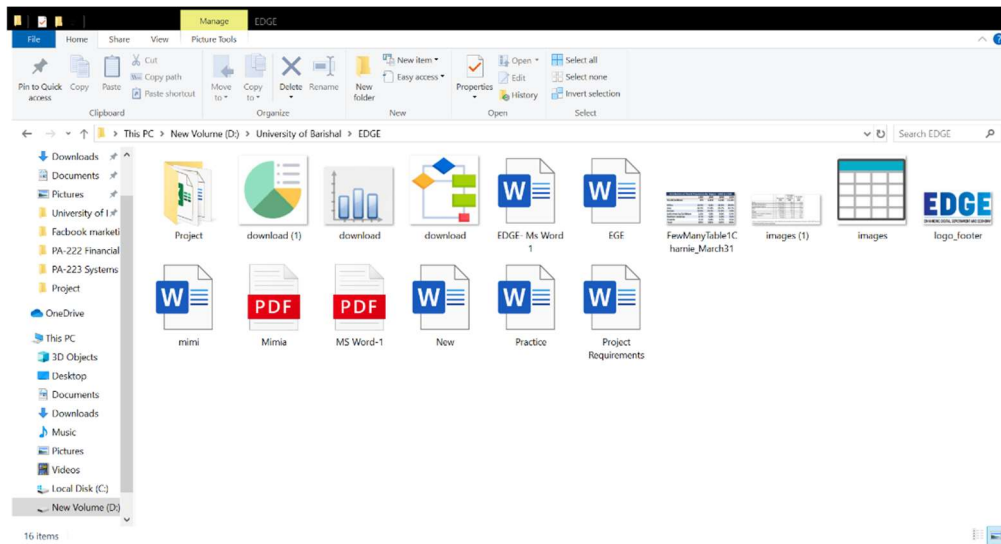
Figure 1: Influence of Social Media on Students

2.2.2 Image 2:

Figure 2: Influence of Social Media on Students

2.2.3 Image 3 : Screenshot

Figure 3: This is screenshot my folder

Chapter 3: Essential Link:

- [Screenshot_2.png](#)
- [2.2.1 Image 1:](#)
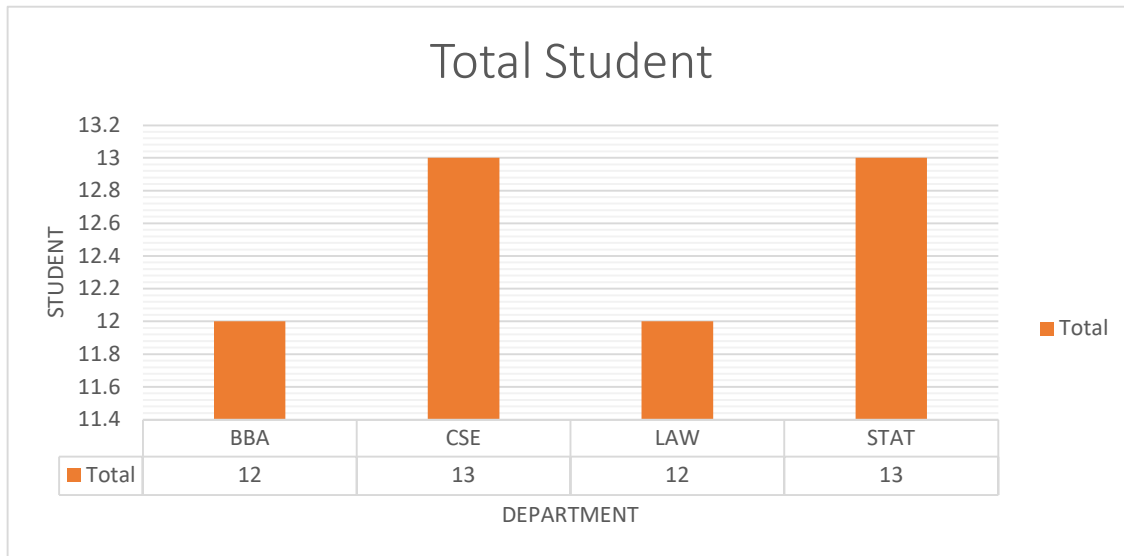- [New Project](#)
- [mailto:khune2@gmail.com](#)

Chapter 4: Analysis

4.1 Demographic Data

The dataset includes 50 students from four departments. On average, students spend **3.8 hours/day** on social media and **4.2 hours/week** on physical activity. Grades range from 50% to 92%, with BBA students outperforming others.
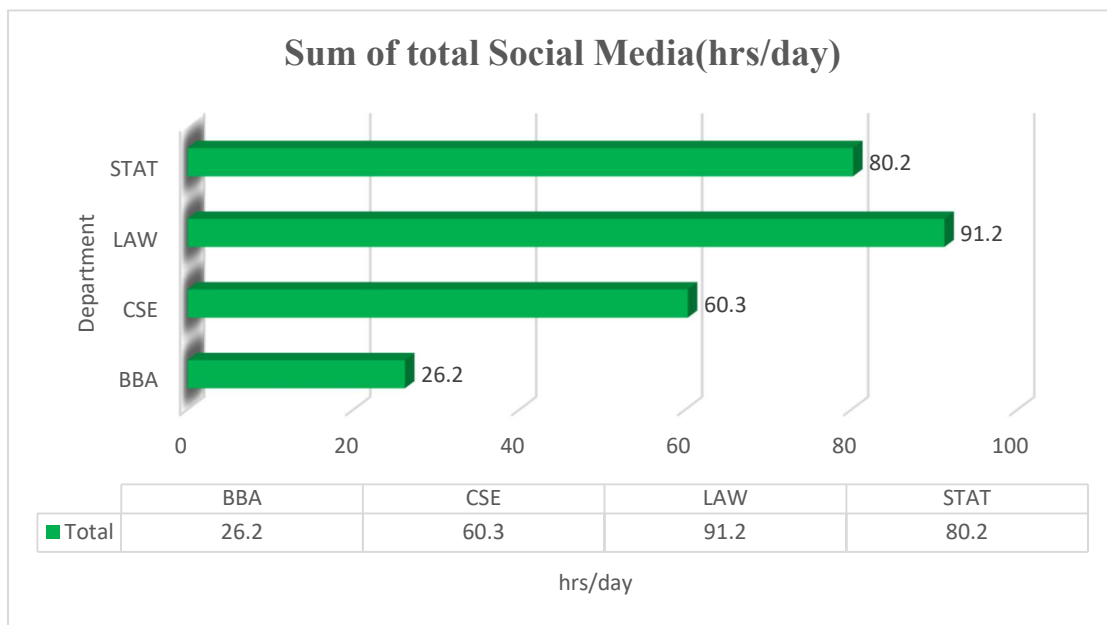
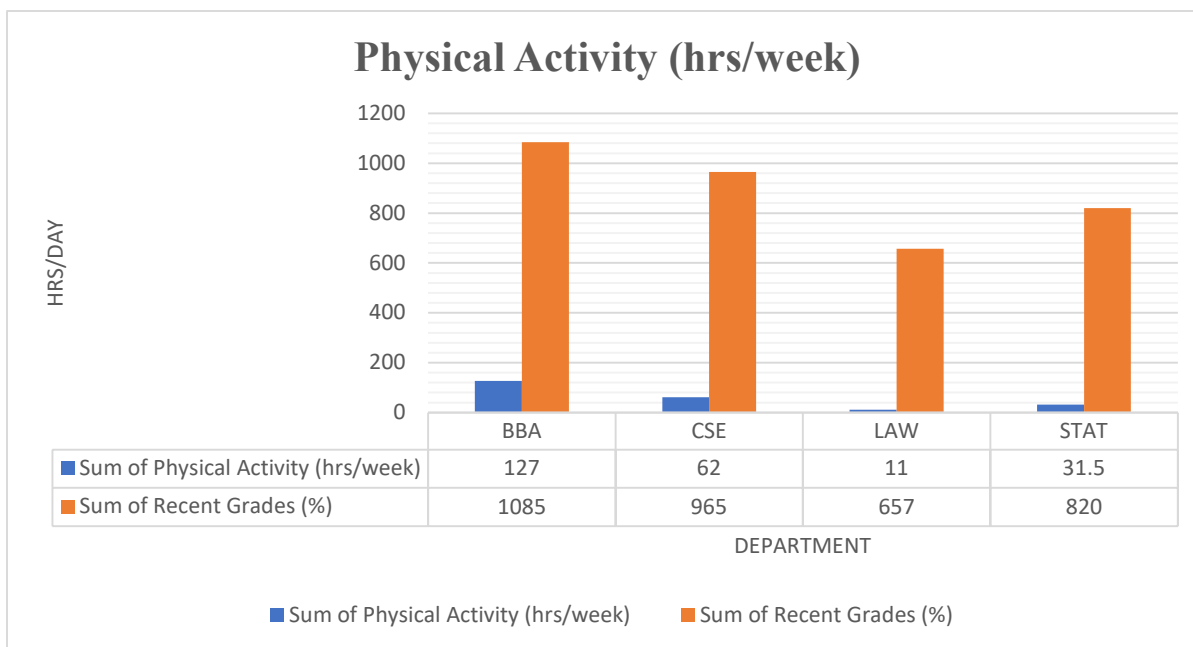## 4.1.1 Visualization of Demographic Data

4.1.1.1 Department
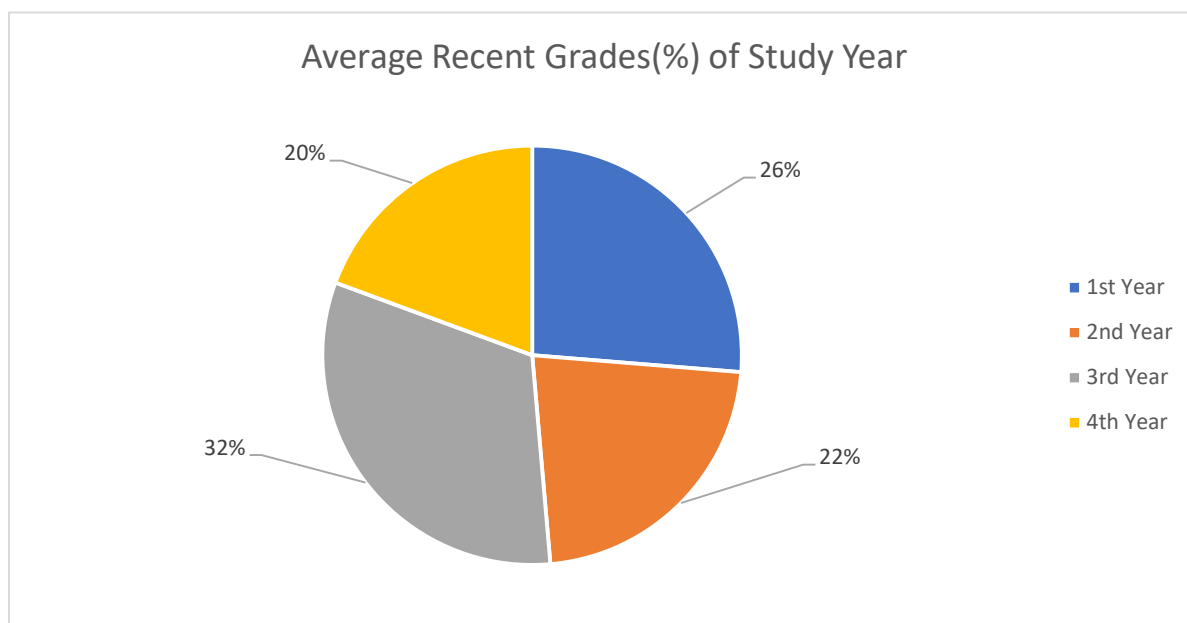

Figure 4: Department

4.1.1.2 Social Media

Figure 5: Social Media

4.1.1.3 Physical Activity

Physical Activity (hrs/week)

DEPARTMENT	BBA	CSE	LAW	STAT
Sum of Physical Activity (hrs/week)	127	62	11	31.5
Sum of Recent Grades (%)	1085	965	657	820

■ Sum of Physical Activity (hrs/week) ■ Sum of Recent Grades (%)

Figure 6: Physical Activity

4.1.1.4 Year of Study

Average Recent Grades(%) of Study Year

20% 26% 22% 32%

■ 1st Year
■ 2nd Year
■ 3rd Year
■ 4th Year

Figure 7: Year of Study

4.2 Correlation

1. **Social Media Usage vs. Grades**:
   (a) **Correlation Coefficient**: **-0.88**
   (b) **Interpretation**: A **strong negative correlation** exists.

   ➢ This means that as social media usage increases, academic grades tend to decrease significantly.

2. **Physical Activity vs. Grades**:
   (a) **Correlation Coefficient**: **+0.82**
   (b) **Interpretation**: A **strong positive correlation** exists.

   ➢ This indicates that higher physical activity hours are associated with improved academic performance.

4.3 Key Notes:

i. **Correlation Strength**:

   ▪ Values closer to **+1** or **-1** signify stronger relationships.
   ▪ **-0.88** and **+0.82** both represent robust correlations.

ii. **Implications**:

   ▪ Social media usage likely distracts from academic focus, reducing grades.
   ▪ Physical activity enhances cognitive function and stress management, boosting grades.

Chapter 4: Result and Conclusion

4.1 Result

Excessive social media usage negatively impacts grades, while physical activity enhances academic performance. BBA students excel due to balanced habits, whereas LAW students show variability.

4.2 Conclusion

Students should limit social media use and prioritize physical activity to optimize academic outcomes. Institutional strategies promoting time management and wellness are recommended.

References

Abdullah Al-Maruf, A. K.-M. (2022). Exploring the Factors of Farmers' Rural–Urban Migration. *agriculture*, 12,722.

al, X. W. (2018). "Characteristics of CH4 Emission in Double Paddy Field Under Climate Change in Southern China Simulated by CMIP5 Climate Model Projections,". *doi: 10.1109/Agro-Geoinformatics.2018.8476031*, (pp. pp. 1-4). Hangzhou, China.

Gurney JJ, Z. p. (1995). The interpretation of the major element compositions of mantle minerals in diamond exploration. *Journal of Geochemical exploration*, 293-309.

Hassan, M. N. (27 May 2015). Examination of land use/land cover changes, urban growth dynamics, and environmental sustainability in Chittagong city, Bangladesh. *Environ Dev Sustain*, 697–716 (2016).

Hugo,G.J. (1992). " Migration and Rural-Urban Linkage in the ESCAP Region". *Paper presented for the pre-conference seminar of the Fourth population Conference on Migration and Migration and Urbanisation: Inter-Relationship with socio-economic Development and Evaluating Policy Issues.* Seoul, Republic of Korea.

Ishtiaque, A. a. (2011). "Migration Objectives and their Fulfillment: A Micro Study of the Rural-Urban Migration of the Slums of Dhaka City". *Malaysian Journal of Society and space,Vol. 7 No. 4*, 24-29.

Md Salman Sohel, Md. Mahidul Islam, Md. Muhubbulah. (2017). Rural urban migration and urban transition in Banglades: A case study of Dhaka city. *Scholar Journal of Arts, Humanities and Social science*, 1809.

Md. Zakir Hossain, Md. Ohidul Alam Khan, Jasim Uddin Ahmed. (2016). Determinants of Rural-Urnan Migration in Bangladesh including its Consequences for Origin Households and Urban Amenities. *STM JOURNALS*, 47-61.

Mirza, M. M. (t 8 (2015)). ―Causal Relationship between Agriculture, Industry and Services Sector for. *Journal of Poverty, Investment and*.

T. Aribarg, C. K. (2017). "Use of CMIP3 and CMIP5 Climate Models to Simulate Change Discharge in the Chao Phraya River Basin,". *2017 21st International Computer Science and Engineering Conference (ICSEC),*, (pp. pp. 1-5). Bangkok, Thailand.