

Original Research Article

Investigating the Factors Affecting Undergraduate Students' Academic Performance

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Abstract: The focus on undergraduate students is particularly important because this stage represents a critical period of transition. Undergraduate education is where students move from structured learning environments of high school to more independent learning settings. They are often faced with increased academic pressures, new social dynamics, and greater personal responsibility. In this context, their academic achievement can be influenced by a wide array of factors, from their inherent intellectual abilities and learning styles to external elements like the quality of teaching, peer relationships, and socioeconomic status. A study to determine the variables influencing academic achievement of undergraduate students in the selected Nursing College, Bengaluru Descriptive approach was used to collect data from 60 subjects selected by simple Random sampling technique consisting 2 sections. Students between 18-20 years are 0.004 times less likely to score 76% and below compared to their counterparts. Male students were 0.005 times less likely to score 76% and below compared to female students. Overall findings of the study clearly showed that the above results revealed that certain demographic variables like age and gender were significant and age and gender had a positive correlation between the variables and female students were more likely to score 76% than male students.

Keywords: Academic Achievement, Undergraduate students, Cognitive factors extrinsic motivation.

INTRODUCTION

One of the main factors influencing undergraduate students' success in their academic endeavors is their level of academic achievement. It is a reflection of a number of interrelated elements that affect learning outcomes in addition to being a gauge of a person's cognitive capacity. In order to create environments that support the best possible student achievement, educators, legislators, and institutions must have a thorough understanding of these elements. To determine the factors impacting academic accomplishment, a great deal of study has been done over the years. These studies repeatedly show that a complex interaction of cognitive, emotional, social, and environmental elements leads to academic performance. Research funds that dropouts often encounter more economic challenges due to the lack of college credentials, connections and career related experiences.

Students with high school diplomas have 12.7% more changes of living in poverty, compared to bachelor's degree holder (or higher) at 4.8% (EDI 2021). It's not a coincidence, too, that college dropouts have been found to be less financially knowledgeable. College graduation rate shows that only 14.7% those enrolled in bachelor degrees and 37.4% of associate's degree enrollees finish their degree in six years. 51.04% students' dropouts because they cannot pay for college. Institutional variables encompass the quality of education, teaching methodologies, and support systems provided

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by the nursing colleges. The curriculum design, pedagogical approaches, and availability of resources such as libraries, laboratories, and clinical placements are critical components. An updated and relevant curriculum that aligns with current healthcare practices ensures that students acquire necessary knowledge and skills. Environmental variables refer to external factors that can influence academic achievement. These include socioeconomic status, family support, and community resources. Supportive family members can provide encouragement and stability, which contributes positively to academic performance. Community resources, including healthcare facilities, professional networks, and internship opportunities, offer practical experience and exposure that enhance learning.

Statement of the Problem:

Even though academic performance has been extensively studied, the precise factors that affect undergraduate students' academic success are frequently unclear or change based on the educational and cultural setting. Universities and colleges in particular still struggle to deal with poor performance, which can result in reduced graduation rates, student turnover, and diminished institutional efficacy. Thus, a targeted examination of the major factors influencing undergraduate students' academic performance is required, especially in the context of Bangalore's nursing schools.

Review of Literature

Smith J (2012)- "Impact of time management skills and academic Miller N (2018) "Investigated the influence of peer relationship and social support on academic achievement" Researcher collected the data from 400 Undergraduate Students, Miller found the positive peer relationships and social support network were associated with better academic performance. The study highlighted that student who had strong social connections and support from peer tended to perform better academically, suggesting that fostering positive social environments can enhance academic success. Clark H (2019)- "Examined the role of physical health and wellness on academic performance among undergraduates "The study involving 350 students, succeed various health factors such as diet, exercise and sleep patterns. Clark found that student who maintained good physical health and wellness had higher academic performance. The research highlighted the importance of promoting healthy lifestyle choices as part of academic support services to improve students overall academic success. 3. Brown L (2014) - "Investigated the influence of socioeconomic status on academic achievement" Researcher using a sample of 350 students from higher socioeconomic backgrounds generally achieved better academic results. The research underscored the disparities in resources and support available to students from different socioeconomic groups. 4. Miller N (2018) "Investigated the influence of peer relationship and social support on academic achievement"

Researcher collected the data from 400 Undergraduate Students, Miller found the positive peer relationships and social support network were associated with better academic performance. The study highlighted that student who had strong social connections and support from peer tended to perform better academically, suggesting that fostering positive social environments can enhance academic success. The proposed approach or solution this study aims to determine the variables influencing academic achievement of undergraduate students through a mixed-methods approach, combining both quantitative and qualitative data collection and analysis. The proposed approach is designed to comprehensively capture the diverse factors that contribute to academic performance. A structured survey will be administered to a large sample of undergraduate students across multiple academic disciplines. The survey will cover key variables such as study habits, intrinsic/extrinsic motivation, stress levels, peer support, family background, and access to institutional resources. Standardized scales, asked on the findings, targeted interventions will be proposed, such as enhancing academic support services, promoting emotional resilience programs, and fostering supportive peer and faculty networks to improve student outcomes. This study adds novel value by tackling a crucial but little-studied area of higher education: the intricate, multidimensional factors affecting undergraduate students' academic performance.

Contextualized Perspectives:

In a more diversified and globalized classroom, the elements influencing students' achievement can fluctuate greatly depending on the cultural and educational setting. By concentrating on undergraduate students in a specific demographic or geographic setting, this study will yield context-specific insights that may result in more successful, locally applicable initiatives to raise academic achievement. These observations can also provide contrasts and similarities with international research, adding to the larger conversation about education.

Resolving Emerging Educational Issues:

In this study, new difficulties in higher education are creatively addressed, such as the impact of digital learning environments, mental health concerns, and rising student.

MATERIAL AND METHODS

This study employs a quantitative to comprehensively investigate the variables influencing academic achievement among undergraduate students. The design integrates quantitative methodologies to ensure a thorough analysis of the data. Specifically, a study will be used to collect quantitative data through surveys, while qualitative insights will be gathered through semi-structured interviews. Reviewed the relevant literature to identify key variables that potentially influence

academic achievement (e.g., psychological, socioeconomic, environmental, and academic factors). Hypotheses was generated based on the literature review, such as "Students with higher levels of self-efficacy will demonstrate higher academic achievement."

Sample Size:

A representative sample of 60 undergraduate students was selected based on the inclusion criteria stratified random sampling to ensure diversity in demographic variables such as gender, academic discipline, and year of study. A structured questionnaire will be developed based on standardized scales, the tool ware constructed and validated by subject experts Methodology of the study includes the research approach. It includes the research design, setting of the study, population sample technique, and sample size, criteria for selection of the samples, development and description of the tools content validity. Reliability, data collection procedure and plan for data analysis. The present study aimed that determine the variables influencing academic achievement among 3rd semester BSC Nursing Students. Descriptive survey approach is used in the research study. The setting for the present study was among third semester B.Sc. nursing students in NR College of nursing.

Data Acquisition and Testing Algorithm:

This algorithm will be used in the quantitative data collection process: Firstly, data was collected by the respondents by constructed tools. The collected data were interpreted and analysed by using the descriptive and inferential statistics o Descriptive statistics provided an overview of demographic traits. And Correlation analysis to ascertain the connections among factors such as academic achievement, stress, and motivation.

Hypothesis Testing:

The research proven that "There is a positive relationship between self-efficacy and academic achievement" by using Pearson’s correlation coefficient and multiple regression analysis. The t-test will be employed to compare means across different groups (e.g., male vs. female students) to identify significant differences in academic achievement.

RESULT AND DISCUSSION

Table 1: Demographic variables

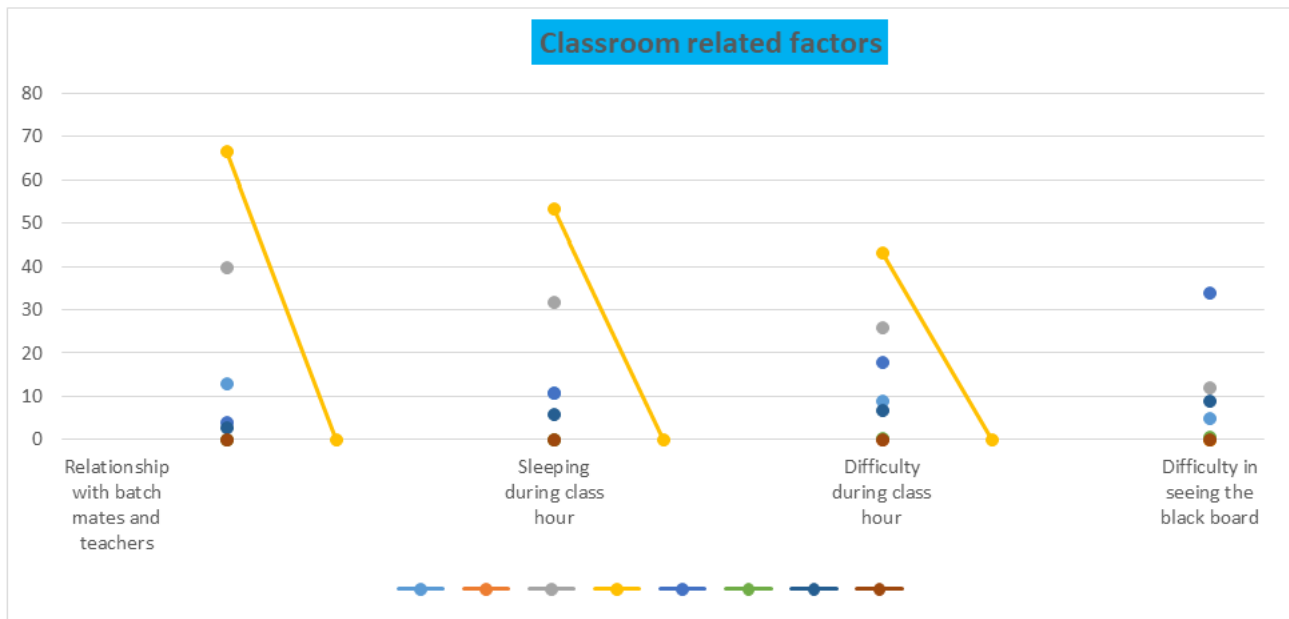
Sl. No	Demographic variable	Frequency	Percentage
1.	Age in years		
	18 – 20 years	47	78.3%
	20 – 22 years	13	21.6%
2.	Gender		
	Male	21	35%
	Female	39	65%
3.	Religion		
	Hindu	28	46.6%
	Muslim	6	10%
	Cristain	24	40%
	Others	2	3.3%
4.	Type of family		
	Joint family	10	16.6%
	Nuclear family	50	83.3%
5.	States belong to		
	Kerala	55	93.33
	Bengal	0	
	Karnataka	02	3.33
	others	03	3.34
6.	Educational status of father		
	Graduate	15	25
	Lower primary	0	0
	Upper primary	5	8.3
	High school	16	26.6
	Higher secondary	24	40
7.	Educational status of Mother		
	Graduate	20	33.3
	Lower primary	2	3.3

Sl. No	Demographic variable	Frequency	Percentage
	Upper primary	1	1.6
	High school	13	21.6
	Higher secondary	24	40
8.	working status of father		
	Private sector	14	23.3
	Government	6	10
	Business	12	20
	Others	28	46.6
9.	Socioeconomic status		
	10000 – 20000 INR	22	36.6%
	20000 – 30000 INR	15	25%
	30000 – 40000 INR	16	26.6%
	Above 50000 INR	7	11.6%
10.	Overall, mark in 10th grade		
	40 – 60%	0	0%
	61 – 75%	5	8.3%
	76 – 85%	20	33.3%
	Above 85%	35	58.3%
11.	Overall, mark in 12th grade		
	40 – 60%	2	3.3%
	61 – 75%	13	21.6%
	76 – 85%	29	48.3%
	Above 85%	16	26.6%

Sixty undergraduate students participated in this study, which examined socioeconomic and academic performance determinants in addition to demographic variables such age, gender, religion, family type, and parental educational history. Of the participants, 78.3% were between the ages of 18 and 20, and 21.6% were between the ages of 20 and 22. With 35% of participants being men and 65% being women, the sample was primarily female. Of the participants, 46.6% identified as Hindu, 40% as Christian, 10% as Muslim, and 3.3% as other. The majority of pupils (83.3%) were from nuclear households, while joint families made up the remaining 16.6%. Kerala accounted for 93.33% of the participants, Karnataka for 3.33%, and other states for 3.34%. Of the fathers, 40% had a 46.6% of the dads worked in other vocations, followed by jobs in the private sector (23.3%), government (10%), and business (20%). The majority of participants (36.6%) came from families that made between INR 10,000 and 20,000 per month, followed by those that made between INR 30,000 and 40,000 (26.6%) and those that made between INR 20,000 and 30,000 (25%). 33.3% of the students received scores between 76 and 85% on their 10th grade exams, while 58.3% of the pupils received scores above 85%. In their 12th grade tests, 26.6% of the pupils received scores above 85%, while 48.3% had scores between 76 and 85%.

Table 2: Classroom related factors affecting the performance of undergraduate students

Factors	Strongly Agree		Agree		Disagree		Strongly Disagree	
	f	%	f	%	f	%	f	%
Relationship with batch mates and teachers	13	21.6	40	66.7	4	6.7	3	5
Sleeping during class hour	11	18.33	32	53.4	11	18.33	6	10
Difficulty during class hour	9	15	26	43.3	18	30	7	11.7
Difficulty in seeing the black board	5	8.3	12	20	34	56.7	9	15



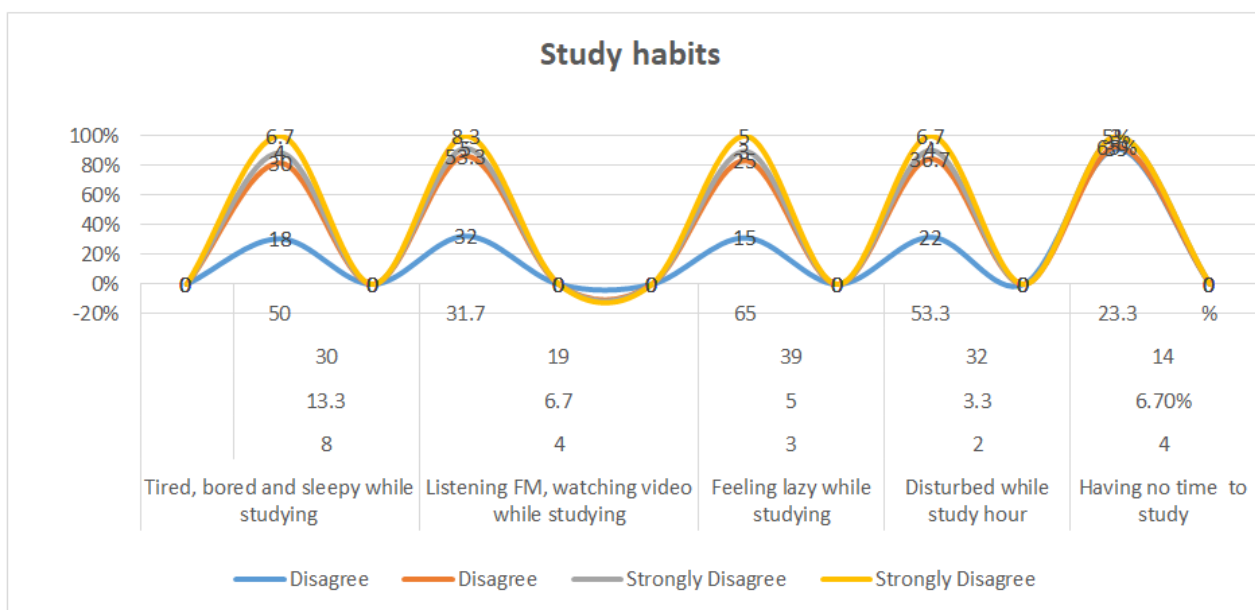
Graph 1: Classroom related factors

In classroom related factors majority of the respondents 40(66.6%) agreed that they had good relationship with batch mates and teachers, 26(43.3%) agreed that they felt difficulties during class hour and 32(53.3%) agreed they were sleeping during class hour.

Table 3: Study habits related variables

Variables	Strongly Agree		Agree		Disagree		Strongly Disagree	
	f	%	f	%	f	%	f	%
Tired, bored and sleepy while studying	8	13.3	30	50	18	30	4	6.7
Listening FM, watching video while studying	4	6.7	19	31.7	32	53.3	5	8.3
Feeling lazy while studying	3	5	39	65	15	25	3	5
Disturbed while study hour	2	3.3	32	53.3	22	36.7	4	6.7
Having no time to study	4	6.7	14	23.3	39	65	3	5

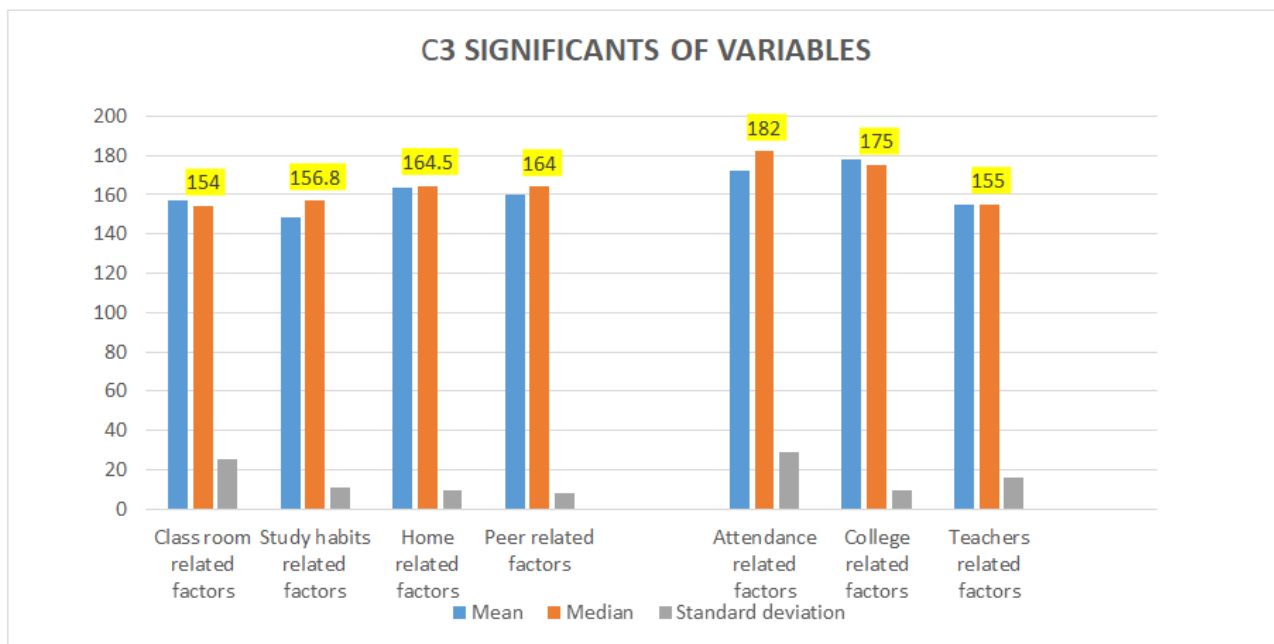
In study habits related factors majority of the respondents 39(65%) agreed that they were feeling lazy while studying, 32(53.3%) respondents disagreed that they listened FM, watching videos while studying.



Graph 2: Study habits related variables

Table 4: Significants of Variables under the Study Objectives

Variables	Mean	Median	Standard deviation
Class room related factors	157	154	25.4
Study habits related factors	148.2	156.8	10.87
Home related factors	163.5	164.5	9.39
Peer related factors	159.8	164	8.31
Attendance related factors	172.3	182	28.74
College related factors	177.8	175	9.67
Teachers related factors	154.75	155	15.75



The study examines several factors that influence academic achievement among undergraduate students. These variables are categorized into classroom-related, study habits, home environment, peer influence, attendance, college-related, and teacher-related factors. Below is a detailed description based on the mean, median, and standard deviation values for each variable: These factors show a moderate spread in their impact on students, with variability possibly reflecting differences in classroom environments, teaching quality, and resources available to students. Study Habits-Related Factors: Mean: 148.2 Median: 156.8 Standard Deviation: 10.87 The lower standard deviation suggests more consistency in study habits among students, which could indicate uniformity in how students approach studying or use study materials. Home-Related Factors: Mean: 163.5 Median: 164.5 Standard Deviation: 9.39 These factors appear to have a stable and significant influence on academic performance, as evidenced by the high median and low variability. Peer-Related Factors: Mean: 159.8 Median: 164 Standard Deviation: 8.31 Peer influence shows strong consistency across the sample, with little deviation, suggesting that peer dynamics may uniformly affect students' academic outcomes. Attendance-Related Factors: Mean: 172.3 Median: 182 Standard Deviation: 28.74 Attendance shows a higher spread in its influence, possibly due to variations in student attendance records or differences in institutional policies related to attendance and its enforcement. College-Related Factors: Mean: 177.8 Median: 175 Standard Deviation: 9.67 Factors related to college resources, infrastructure, and support services show a moderate and stable impact on academic performance, with a relatively low deviation from the mean. Teacher-Related Factors: Mean: 154.75 Median: 155 Standard Deviation: 15.7 Teacher-related factors exhibit a more variable influence, likely reflecting differences in teaching styles, faculty engagement, and availability of guidance from teachers. Relevance of the Variables to the Study's Objectives According to the findings, some characteristics, such study habits and home environment, are consistent among all students, but other characteristics, including attendance and classroom-related factors, show more variation. This suggests that strategies for raising academic attainment should concentrate on areas where there is more variation, such enhancing classroom conditions and attendance regulations. Positive academic results could be sustained over time by promoting good study techniques and strong parental support. Level of significance A logistic regression was performed to ascertain the effects of age, gender, religion, family type, education status, occupational status, and socioeconomic status on the likelihood of students scoring 76% and above. The logistic regression model was statistically significant, $\chi^2(23) = 47.995$, $p < 0.002$. Whereas in Hosmer and Lemeshow Test shows $\chi^2(8) = 7.692$, $p = 0.464$ which says model is a good fit. The model explained 73.9% (Nagelkerke R²) of the variance in postnatal depression and correctly classified 56.7% of cases.

age ($p < 0.027$), and gender ($p < 0.001$) were significant. Religion, family type, education status, occupational status, and socioeconomic status were not. Students between 18-20 years are 0.004 times less likely to score 76 % and below compared to their counterparts. Male students are 0.005 times less likely to score 76 % and below compared to female students.

CONCLUSION

The purpose of this study was to determine and examine the major factors affecting undergraduate students' academic performance. The results showed that a number of factors, including those linked to the classroom, study habits, the home environment, peer influence, attendance, college-related issues, and teacher engagement, significantly impacted student success.

The Data Revealed that:

- Attendance and classroom-related factors showed the greatest variability, suggesting that these areas might be influenced by institutional policies, student commitment, or access to resources.
- Study habits and home-related factors demonstrated more consistency across students, indicating their fundamental role in supporting academic success. A stable and supportive home environment, coupled with effective study habits, plays a crucial role in academic achievement.
- Peer influence and college-related factors also had a positive impact, highlighting the importance of a strong social support system and institutional facilities in enhancing academic performance.

According to the study's findings, academic success is complex and impacted by a range of internal and external factors, including peer networks, attendance regulations, and the caliber of instruction. Therefore, educational institutions ought to take a comprehensive strategy to helping students, emphasizing improving classroom conditions, offering academic support, encouraging peer interaction, and guaranteeing consistent attendance.

RECOMMENDATIONS

1. Institutions should implement strategies to improve classroom engagement and student attendance.
2. Academic support programs should focus on developing students' study habits and self-management skills.
3. Additional support should be provided to students facing challenges in their home environment or peer networks, ensuring equitable access to resources and mentoring.

In conclusion, understanding the interplay of these variables provides valuable insights for educators and policymakers to design targeted interventions that promote student success and improve overall academic outcomes.

Nomenclature

N=Estimated Sample Size

δ =clinically significant difference

σ =standard deviation of the differences

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Author Contribution

Dr. Vijayamalar created the conceptual framework and overall research strategy for the study and determined the main factors affecting undergraduate students' academic performance. Literature evaluation In order to uncover gaps in the present understanding of the elements impacting academic performance, Ms. Sangita did a thorough evaluation of the body of existing literature in order to gather pertinent papers and theories that influenced the research topic. Methodology: Vijayamalar developed and carried out the research methodology, which included designing surveys, questionnaires, and data collection tools and making sure they were in line with the goals of the study. Data gathering: Aneesha Manoj conducted data gathering, which included recruiting participants, administering questionnaires, and conducting interviews with undergraduate students while maintaining accuracy and ethical standards. Data Analysis: Using both statistical and qualitative methods, Prof. Devinanjappan examined the gathered data to find patterns, correlations,

Declaration

I/We hereby declare that the study titled "To Determine the Variables Influencing Academic Achievement of Undergraduate Students" is an original work carried out by me/us. All the data, information, and results presented in this

study are genuine and have been collected in accordance with ethical standards and the guidelines provided by the concerned institution. I/We affirm that this study has not been submitted to any other institution or journal for consideration, publication, or review. All sources of information used in the study have been duly acknowledged, and no part of this work violates any copyright or intellectual property rights.

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Competing Interest: The authors declare that there are no competing interests regarding the publication of this study titled "To Determine the Variables Influencing Academic Achievement of Undergraduate Students."

Ethical Clearance: This study titled "To Determine the Variables Influencing Academic Achievement of Undergraduate Students" was conducted in accordance with ethical guidelines and received ethical clearance from the Institutional Ethics Committee of Smt. Nagarathnamam College of Nursing. Confidentiality and anonymity of the participants were strictly maintained, and their personal data were protected throughout the research process.

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