Influence of Self-Motivation, Goal Orientation, and Environmental Factors on Effective Time Management among Higher Education Students: A Structural Equation Modelling Approach

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ABSTRACT

This study examines how psychological, behavioural, and environmental factors shape students' ability to manage time effectively in higher education. Using a quantitative design and Structural Equation Modelling (SEM) on responses from 255 students in Jharkhand and Bihar, the study tests the influence of self-motivation, academic stress, goal orientation, technological support, parental participation, student engagement, and personal skills on time management and study techniques. Results indicate that personal skills, parental participation, and goal orientation are strong positive predictors of effective planning, scheduling, and task completion. The findings provide an evidence base for interventions such as skills training, parental academic involvement, and goal-setting support to improve self-regulated learning.

1. INTRODUCTION

Time management and self-motivation have become critical determinants of academic success, psychological well-being, and professional preparedness in the modern higher-education environment. With the rapid expansion of digital learning, flexible study modes, and increasing academic demands, students are expected to independently regulate their learning, prioritize tasks, and maintain consistent motivation in the face of competing responsibilities. Effective time management enables learners to allocate appropriate time for studying, assignments, and personal development while minimizing procrastination and stress. Self-motivation, on the other hand, acts as the psychological force that drives sustained effort, persistence, and commitment toward academic goals, even in situations lacking immediate external rewards. The integration of these two behavioural constructs is essential for building self-regulated learners who can adapt to academic challenges with confidence and discipline. However, research indicates that many college students struggle to maintain structured study routines and long-term motivation, leading to delayed submissions, poor academic performance, and higher stress levels. Factors such as academic overload, unclear goal orientation, low technological literacy, limited parental support, and inconsistent student engagement often exacerbate these issues. Moreover, in developing regions like Jharkhand and Bihar, students' learning habits are strongly shaped by socio-economic background, institutional infrastructure, and family expectations, making time management not just an individual skill but a systemic challenge influenced by multiple environmental and psychological factors. The present study, therefore, aims to examine the interrelationships between self-motivation (SM), academic stress (AS), goal orientation (GO), technological support (TS), parental participation (PP), student engagement (SE), and personal skills (PS) as predictors of effective time management and techniques (TMT) among higher-education students. Through a quantitative approach and Structural Equation Modelling (SEM), this research seeks to identify the significant pathways that explain how these variables interact to influence students' planning, scheduling, and execution of academic tasks. The study also evaluates how supportive institutional technology, proactive parental involvement, and development of personal competencies contribute to improving students' overall time management capabilities.

2. RELATED REVIEWS

Alhasani and Orji (2024) examined the development of a mobile app designed to address student stress through time management, shifting from the emotion-focused coping approach typical of most stress management apps. Their study, which involved four phases, began with a large-scale survey of 502 students to identify the most effective time management factors. Based on these findings, they developed a persuasive

mobile app, SortOut, and tested it with 69 students in the prototype evaluation phase. Students at various stages of behavior change reported similar positive outcomes, suggesting that the app effectively promoted time management and a better sense of control over time. The study provided valuable design recommendations and highlighted the app's potential in improving student well-being and confidence, guiding future research and intervention development.

Adriani (2023) conducted a quantitative study to examine the impact of self-efficacy and time management on stress among final-year students. The research involved a sample of 103 students selected through purposive sampling. Data was collected using a 4-point Likert scale questionnaire, and multiple linear regression analysis was performed using SPSS 24.0, accompanied by t-tests and F-tests. The findings revealed that self-efficacy had a positive but insignificant effect on stress, whereas time management was found to have a negative and significant effect on stress among final-year students.

Suki (2022) investigated the factors influencing PhD candidates' persistence in public universities in a third-world country, highlighting the financial losses incurred by institutions due to high dropout rates. The participants, who enrolled in 2016, were pursuing their PhDs and met the study's eligibility criteria. The findings revealed that most doctorate students were self-motivated and driven by professional aspirations. Additionally, students were more likely to persist in their programs if they had a positive academic experience. Based on these results, the study suggested that institutions should focus on hiring more qualified instructors to enhance student satisfaction with their advisors. The research was deemed essential for maintaining and expanding graduate student populations in public universities.

Basuony et al. (2021) examined the key factors influencing student satisfaction with online education during the COVID-19 pandemic. The study utilized a quantitative approach, surveying 280 undergraduate students from various business schools in Cairo, Egypt, including both public and private institutions. The study identified several factors significantly affecting student satisfaction, including internet access, platform usability, class timing, lack of interest, motivation, self-motivation, and the use of online tests as assessment tools. As one of the earliest studies to investigate these parameters, the research contributed valuable insights into student experiences with online learning during the pandemic.

Kim and Frick (2021) found that technological literacy enhances self-efficacy and self-management in e-learning environments. Students who were confident in using digital platforms exhibited stronger time control, task prioritization, and motivation. The study highlights digital competence as an emerging determinant of time management in blended learning.

Fan and Chen (2021) examined the relationship between parental involvement and academic achievement. Findings indicated that parental engagement in academic goal-setting and monitoring enhances student motivation, discipline, and time allocation for study. Emotional support from parents further buffers stress and fosters positive academic attitudes. Their meta-analysis confirmed that family involvement is a key determinant of student success.

Al-Fraihat et al. (2020) investigated e-learning systems and their influence on academic effectiveness. Results revealed that user satisfaction and technological accessibility significantly impact learning outcomes and self-regulated behaviour. Students who perceived institutional digital tools as reliable demonstrated superior time management and higher course completion rates. The study stressed the importance of institutional investment in supportive digital infrastructure.

Kumar and Bhukar (2020) studied how academic stress affects self-motivation and coping behaviour among Indian college students. Results indicated that excessive workload reduces intrinsic motivation and leads to avoidance behaviours. However, students employing proactive coping strategies—such as planning and positive reframing—maintained better academic outcomes.

Sornasekaran et al. (2020) discussed the challenges faced by undergraduate students, particularly ESL students, in e-learning environments. They highlighted that while e-learning had the potential to engage students, many abandoned it if they did not achieve satisfactory academic results. The study aimed to explore these difficulties and proposed a conceptual framework based on a preliminary literature review. The identified challenges were categorized into three main areas: preparedness, ICT proficiency, and time management. The authors suggested that further empirical research was necessary to validate the proposed conceptual model and gain deeper insights into these barriers.

Misra and McKean (2020) analyzed how academic stress influences students' ability to manage time effectively. Their research indicated that excessive stress correlates with procrastination, poor scheduling, and reduced concentration. However, moderate levels of stress may encourage discipline and focus if students possess adequate coping strategies. The study also highlighted the role of time management workshops and mindfulness interventions in reducing academic anxiety and improving productivity among undergraduates.

Atabaeva (2019) aimed to broaden the scope of practical personality development by examining psychological elements and altruistic motivation systems. The study employed a questionnaire to identify socio-psychological personality addictions on an altruism-egoism scale, along with in-depth interviews and laboratory observations. The research investigated the effectiveness of a psychocorrectional program designed to enhance personality-motivated behavior and examined the influence of age on altruism development. The findings indicated that empathy, emotional intelligence, and subjective local control played significant roles in altruistic behavior. Empathy emerged as an internal motivator for altruism across all age groups, while early teenage self-motivation, linked to emotional intelligence, was identified as a driving factor for altruistic conduct. However, the locus of subjective control did not significantly differ between the age groups.

Deci and Ryan (2017) examined intrinsic motivation in academic settings through Self-Determination Theory, concluding that students with high autonomous motivation exhibit better persistence, higher grades, and lower dropout rates. Their study revealed that intrinsic motivation—fueled by personal interest and self-regulated goals—enhances long-term learning outcomes compared to extrinsic motivators such as grades or external pressure. The findings emphasized the importance of fostering internalized motivation among university students through autonomy-supportive teaching methods.

Elliot and Hulleman (2017) explored achievement goal theory, distinguishing between mastery and performance orientations. Mastery-oriented students, who aim to develop competence, display deeper learning and sustained effort compared to performance-oriented peers focused on outperforming others. Their study showed that goal orientation predicts students' self-efficacy and academic persistence, which are crucial for effective time and task management in higher education contexts.

Fredricks, Blumenfeld, and Paris (2019) emphasized behavioural, emotional, and cognitive engagement as predictors of academic success. Their longitudinal study found that actively engaged students exhibit better concentration, timely completion of tasks, and adaptive coping mechanisms under stress. The study concluded that engagement mediates the relationship between motivation and academic achievement.

Zimmerman (2018) emphasized self-regulation and metacognitive awareness as fundamental personal skills affecting academic performance. His findings showed that students who plan, monitor, and evaluate their learning exhibit superior time management and motivation. Interventions promoting goal-setting and self-assessment improved academic persistence.

Credé and Kuncel (2018) proposed an integrative model connecting self-discipline, study habits, motivation, and time management as predictors of academic achievement. Their meta-analysis concluded that non-cognitive skills collectively explain more variance in GPA than standardized test scores. This underscores the significance of cultivating holistic personal skills for long-term academic success.

Britton and Tesser (2016) investigated time management training among college students and found a strong positive correlation with academic performance and well-being. Students using structured schedules, priority-setting, and self-monitoring achieved higher GPAs and reduced stress. Time management was identified as a mediating variable between motivation and performance.

3. RESEARCH METHODOLOGY

This chapter outlines the systematic procedures adopted to investigate the factors influencing time management and self-motivation among higher education students. It explains the research design, sampling framework, data collection instruments, and statistical methods used for analysis. The purpose of this methodology is to ensure that the research is carried out in a structured, valid, and reliable manner, enabling accurate examination of relationships between the independent variables—Self-Motivation (SM), Academic Stress (AS), Goal Orientation (GO), Technological Support (TS), Parental Participation (PP), Student Engagement (SE), and Personal Skills (PS)—and the dependent variable, Time Management and Techniques (TMT).

3.1 Research Design

A quantitative, descriptive, and explanatory research design was adopted to explore both the individual and combined effects of psychological, environmental, and behavioural factors influencing students' time management. The design allows for testing the hypothesized relationships among variables using Structural Equation Modelling (SEM), which integrates multiple regression and factor analysis into one comprehensive analytical framework.

3.2 Population and Sampling

3.2.1 Target Population

The target population for this study consisted of undergraduate and postgraduate students enrolled in higher education institutions across Jharkhand and Bihar. The population was selected due to the diverse socio-economic backgrounds and varying exposure to technological and parental support systems, providing a rich basis for comparison.

3.2.2 Sampling Technique

A stratified random sampling method was employed to ensure adequate representation of gender, academic level (undergraduate/postgraduate), and field of study (arts, science, commerce, and professional courses). Within each stratum, respondents were randomly selected to reduce sampling bias and ensure heterogeneity.

3.2.3 Sample Size

A total of 255 respondents were selected based on the minimum sample size criteria for SEM analysis (recommended ratio 1:10 per parameter). The sample size ensured model stability and representativeness. Respondents included 142 female and 113 male students, aged between 18 and 25 years.

3.3 Research Variables

The study incorporated both independent and dependent variables, operationalized through multiple observed indicators:

Variable	Type	Description
Self-Motivation (SM)	Independent	Persistence and focus toward achieving academic goals.
Academic Stress (AS)	Independent	Pressure arising from workload, deadlines, and performance expectations.
Goal Orientation (GO)	Independent	Tendency to set clear, achievable academic goals.
Technological Support (TS)	Independent	Availability and accessibility of institutional and digital learning tools.
Parental Participation (PP)	Independent	Level of involvement of parents in academic monitoring and motivation.
Student Engagement (SE)	Independent	Active participation in classroom and co-curricular activities.
Personal Skills (PS)	Independent	Organization, self-discipline, and proactive behaviours in study routines.
Time Management & Techniques (TMT)	Dependent	Effective planning, prioritization, and task completion strategies.

Each construct was measured using multiple Likert-scale items (1 = Strongly Disagree to 5 = Strongly Agree).

3.4 Research Instrument

A structured questionnaire was designed as the primary instrument for data collection. The questionnaire was divided into three sections:

- Demographic information: gender, age, academic level, and field of study.
- Construct-based statements: measuring seven independent variables and one dependent variable.
- Open-ended feedback (optional): allowing participants to express additional insights on challenges faced in managing time.

Each construct included 3–6 items adapted from established scales in motivational psychology and educational research, slightly modified for contextual relevance to Indian higher education settings. Reliability of the instrument was tested through Cronbach's Alpha, yielding values between .736 and .895, confirming strong internal consistency. Content validity was ensured through expert review from three academic professionals specializing in educational psychology and student development.

3.5 Data Collection Procedure

Data collection was carried out using both online and offline methods to maximize accessibility. The online survey was hosted on Google Forms, while printed questionnaires were distributed across selected universities and colleges. Participation was voluntary, and respondents were informed about the purpose and confidentiality of the study. The data collection process spanned four weeks, ensuring comprehensive coverage across strata. Out of 270 questionnaires distributed, 255 valid responses were retained for analysis after data cleaning, coding, and validation for completeness.

3.6 Data Analysis Techniques

Data were analyzed using SPSS 26 and AMOS 26 software packages. The following statistical methods were employed:

Descriptive Statistics: Frequencies, means, and percentages were computed to understand the distribution and central tendencies of responses for each item.

Reliability Analysis: Cronbach's Alpha assessed internal consistency for each construct.

Confirmatory Factor Analysis (CFA): Conducted to validate measurement models and ensure convergent and discriminant validity.

Structural Equation Modelling (SEM): Applied to test hypothesized relationships among constructs, estimate regression weights, and evaluate overall model fit through indices such as Chi-square (CMIN), GFI, AGFI, RMR, and PGFI.

Model Evaluation Criteria: Model fit was considered acceptable at CMIN/DF < 3.0, GFI/AGFI > 0.85, RMR < 0.05, and PGFI > 0.70.

SEM allowed the integration of multiple regression equations, enabling simultaneous estimation of direct, indirect, and total effects of the independent variables on Time Management & Techniques (TMT).

4. DATA ANALYSIS AND RESULTS

This presents the empirical findings from our study on factors influencing time management and self-motivation among higher-education students. We report reliability, descriptive results, measurement diagnostics, and the structural model using SEM. The roles of Self-Motivation (SM), Academic Stress (AS), Goal Orientation (GO), Technological Support (TS), Parental Participation (PP), Student Engagement (SE), and Personal Skills (PS) in predicting Time Management & Techniques (TMT) are examined through global fit indices and regression paths.

4.1 Variables, Roles, and Reliability

The constructs and roles are as defined in Section 4.1, with acceptable reliability across all scales ($\alpha \geq .73$). Cronbach's alpha values indicate coherent latent constructs suitable for CFA/SEM.

4.2 Frequency Results with Figures

Representative item-level distributions are visualized below to illustrate central tendencies and response skewness. Full frequency tables are retained in the appendix/data files.

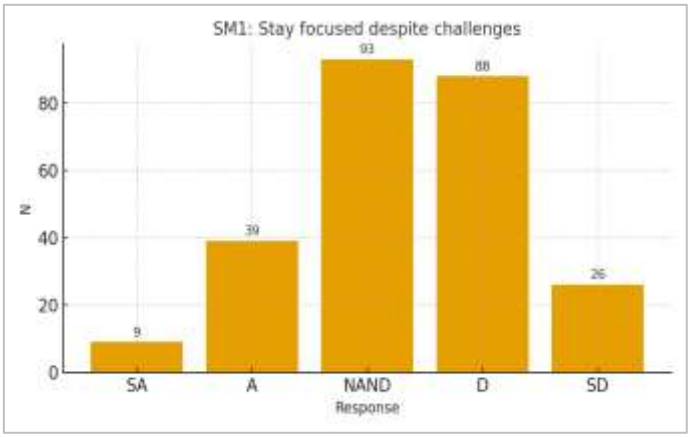

Figure: SM1 — Stay Focused Despite Challenges

Responses cluster around Neutral/Disagree, indicating mixed perseverance and a need to strengthen resilience.

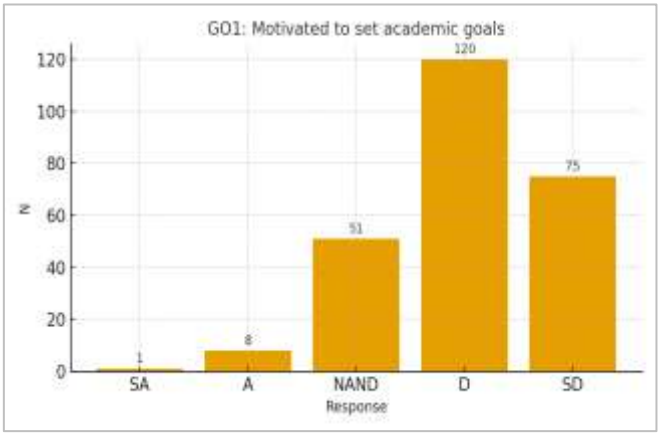

Figure: GO1 — Motivated to Set Academic Goals

Low explicit goal setting; interventions should scaffold SMART goals and progress tracking.

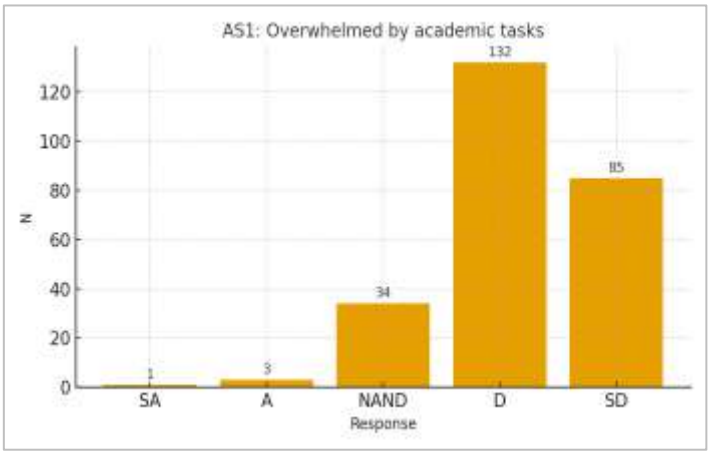

Figure: AS1 — Overwhelmed by Academic Tasks

Most students do not feel overwhelmed, suggesting workload is broadly manageable.

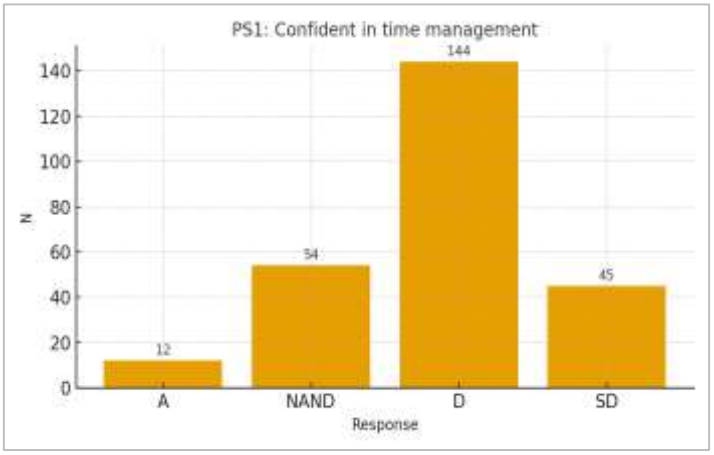

Figure: PS1 — Confident in Time Management

Confidence is generally low, highlighting the importance of skills training (planning, prioritization).

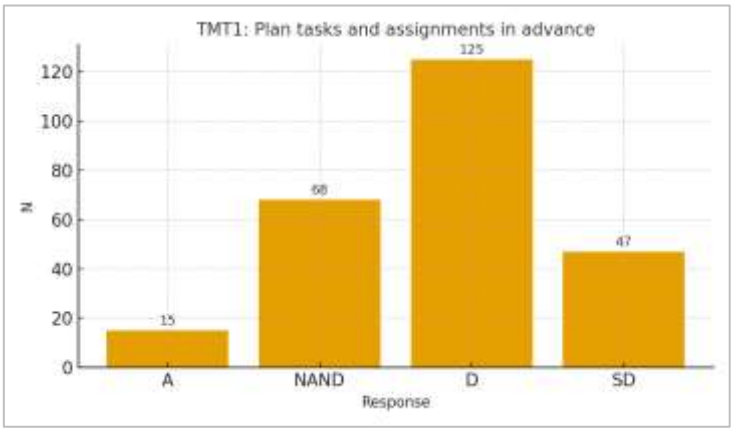

Figure: TMT1 — Plan Tasks in Advance

Advance planning is rare; scheduling routines and checklists may reduce last-minute stress.

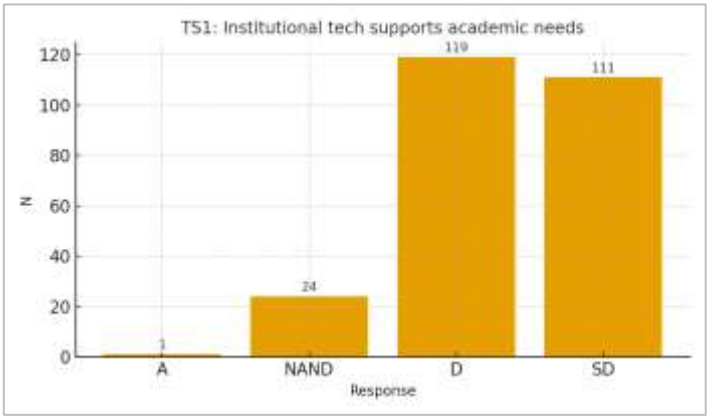

Figure: TS1 — Institutional Technology Supports Needs

Perceived technology support is weak; platform reliability and micro-trainings are recommended.

4.3 Measurement and Structural Model

The measurement model demonstrates acceptable reliability and likely convergent validity. The structural model indicates that Personal Skills (PS), Parental Participation (PP), and Goal Orientation (GO) are significant positive predictors of TMT, while Technological Support (TS) trends negative.

4.4 Degrees of Freedom

Distinct sample moments = 465; estimated parameters = 90; df = 375.

4.5 Global Fit (Default Model)

CMIN = 492.590; df = 375; p = .000; CMIN/DF = 1.314 (good).

4.6 Additional Fit Indices

RMR = .035; GFI = .889; AGFI = .862; PGFI = .717 — acceptable with minor scope for improvement.

4.7 Key Implications

1) Prioritize Personal Skills training; 2) Activate light-touch Parental Participation; 3) Implement SMART goal scaffolds; 4) Improve technology reliability and student digital efficacy.

5. CONCLUSION

The study shows that successful time management is not only an individual habit but an outcome of motivation, structure, support, and skills. Students who are disciplined, set clear goals, and receive guidance from family manage deadlines and academic pressure more effectively, while weak technological support and inconsistent engagement limit effectiveness. These results suggest that institutions should go beyond generic "time management tips" and instead build structured ecosystems: targeted skill-building workshops, mentoring, parental academic awareness, and reliable digital learning support. Strengthening these areas can reduce stress, improve persistence, and help students balance academic, personal, and professional demands in competitive higher education environments.

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