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The Effect of Learning Strategy, Stress Management, and Social Support on Student Productivity: A Human Resource Development Perspective among FEBI UINSU Students

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Abstract

This study aims to analyze the influence of learning strategy, stress management, and social support on student productivity among students of the Faculty of Islamic Economics and Business at Universitas Islam Negeri Sumatera Utara. This research employs a quantitative approach with an explanatory research design involving 100 respondents selected through proportionate stratified random sampling. Data analysis was conducted using multiple linear regression with the assistance of IBM SPSS Statistics. The results indicate that learning strategy does not have a significant effect on student productivity, while stress management and social support have a positive and significant influence in improving productivity. Simultaneously, all three variables have a strong effect on student productivity, highlighting the importance of integrating cognitive, psychological, and social aspects in supporting academic performance. The main finding of this study reveals that social support is the most dominant factor, indicating that support from the surrounding environment, such as family, peers, and institutions, plays a greater role compared to other factors in enhancing student productivity. The novelty of this study lies in its integrative approach, which combines these three aspects simultaneously within the context of Islamic higher education, which has previously been examined in a more partial manner.

Introduction

Student productivity is a crucial indicator in assessing the success of higher education because it reflects a student's ability to effectively manage academic activities to achieve optimal learning outcomes. Student productivity is measured not only by their Grade Point Average (GPA), but also by their ability to complete assignments on time, manage study time, maintain motivation, and adapt to academic demands. According to Alj & Bouayad (2024), students' academic performance reflects the effective integration of cognitive, psychological, and social resources in achieving academic goals.

The importance of student productivity is increasingly relevant amid the increasing complexity of higher education. Statistik Pendidikan Tinggi (2023) shows that the number of active students in Indonesia has reached more than 8.9 million. This large student population is accompanied by increasing academic demands, such as high workloads, intense academic competition, and a shift to digital-based learning systems. However, these increased demands have not been fully matched by students' ability to effectively manage their academic activities, resulting in many students still experiencing difficulties in maintaining consistent learning productivity.

Student productivity is a crucial issue to address because it directly relates to the quality of learning outcomes and academic success (Mejía-Rodríguez & Kyriakides, 2022; Gardner et al., 2023; Mulaudzi, 2023). In this study, student productivity was measured through four main dimensions: academic engagement, study consistency, task completion, and academic

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achievement. Productive students are characterized by active involvement in the learning process, consistency in their studies, the ability to complete assignments on time, and the achievement of established academic targets. Based on initial observations and the distribution of a preliminary questionnaire to 30 students from the Faculty of Islamic Economics and Business at the State Islamic University of North Sumatra (FEBI UINSU), it was found that 58.3% of students admitted to frequently procrastinating on completing coursework, 55% of students were inconsistent in their weekly study routine, 61.7% of students felt their learning productivity decreased when faced with multiple assignments simultaneously, and only 38.3% of students reported being able to consistently complete all academic assignments on time. These findings indicate that student productivity remains an issue that requires special attention within the FEBI UINSU environment.

One factor thought to influence student productivity is learning strategy. According to Zimmerman (2000), learning strategy is a student's ability to plan, organize, monitor, and evaluate their learning process independently. A good learning strategy enables students to set clear learning goals, manage their time effectively, monitor their learning progress, and evaluate their achievements. Thus, students are better able to optimize their learning process and increase their academic productivity.

The relationship between learning strategy and student productivity can be explained through students' ability to manage their daily learning activities (Hongsuchon et al., 2022; Aporbo, 2023; Abidin & Muhammad, 2024). Students who have clear learning goals, a regular study schedule, and the ability to evaluate their learning process tend to be more active in lectures, study more consistently, and are better able to complete assignments on time. Conversely, students who lack a good learning strategy tend to have difficulty managing their time and determining academic priorities, resulting in lower productivity.

Almoslamani (2022) research shows that learning strategies have a positive impact on student academic performance. The better a student's learning strategies, the higher their effectiveness and efficiency in completing academic activities. However, initial observations of students at the Faculty of Economics and Business (FEBI) at UINSU (State Islamic University of Indonesia) indicate that there are still problems in implementing learning strategies. 63.3% of students admitted to not having a regular study schedule, 56.7% rarely evaluated their learning methods, and 60% stated that they only studied intensively when exams or assignment deadlines were approaching. This situation indicates that the application of learning strategies by some FEBI students at UINSU is still suboptimal, potentially impacting their academic productivity.

In addition to learning strategies, student productivity is also influenced by their ability to manage academic stress, or stress management. According to Lazarus & Folkman (1984), stress management is an individual's ability to control the pressures arising from various demands so that they do not interfere with the achievement of predetermined goals. In college life, stress can arise from numerous assignments, pressure to achieve grades, organizational demands, and the thesis completion process.

The ability to manage stress is crucial because uncontrolled stress can reduce students' concentration, motivation, and learning effectiveness. Conversely, students who can manage stress tend to be more focused on their studies, better able to cope with academic pressure, and more productive in completing various coursework. Research by Misra & McKean (2020) shows that students with good stress management skills tend to have higher levels of productivity and academic achievement than those experiencing prolonged stress.

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Academic stress issues were also found among students at the Faculty of Economics and Business (FEBI) at UINSU. Based on initial observations, 70% of students admitted to feeling stressed when facing multiple assignments simultaneously, 61.7% of students had trouble concentrating when facing academic pressure, and 58.3% of students reported experiencing anxiety before exams or important presentations. These findings indicate that stress management remains a challenge for some students and has the potential to impact their productivity in carrying out academic activities.

The next factor thought to influence student productivity is social support. According to Cohen & Wills (1985), social support is assistance an individual receives from their environment in the form of emotional support, information, or tangible assistance that can help them cope with various pressures and difficulties. Social support can come from family, peers, professors, or other academic environments.

The relationship between social support and student productivity can be seen in its role in increasing learning motivation and reducing academic stress. Students who receive good social support tend to be more confident, have a high enthusiasm for learning, and are better able to face various academic challenges. Conversely, a lack of social support can lead to students feeling isolated, losing motivation, and experiencing decreased learning productivity.

Wilks (2008) research found that students who receive good social support from family, friends, and lecturers have higher learning motivation and are more productive in carrying out academic activities. Among students at the Faculty of Economics and Business (FEBI) UINSU, preliminary observations showed that 66.7% of students felt more motivated when they received support from their families, 53.3% of students frequently discussed matters with friends when experiencing learning difficulties, and 50% of students stated that their lecturers' guidance was very helpful in completing academic assignments. However, some students still felt that the social support they received was not optimal, potentially impacting their academic productivity.

Theoretically, the relationship between learning strategies, stress management, social support, and student productivity can be explained through the management theory proposed by Robbins & Coulter (2018), which states that productivity is the result of an individual's effectiveness and efficiency in managing resources to achieve goals. In the context of higher education, learning strategies represent a student's ability to manage cognitive resources, stress management describes the ability to manage emotional resources, while social support reflects the utilization of available social resources. These three factors are believed to play a significant role in increasing student productivity.

However, studies integrating cognitive, emotional, and social factors to comprehensively explain student productivity are still relatively limited. Previous research generally examined these variables separately. Almoslamani (2022) only examined the effect of learning strategies on academic performance, Misra & McKean (2020) focused on academic stress management, and Wilks (2008) examined social support on student well-being. Research examining these three variables simultaneously on student productivity is still relatively limited, particularly in the context of Islamic higher education.

Students in the Faculty of Islamic Economics and Business, State Islamic University of North Sumatra, have unique academic characteristics because, in addition to facing general academic demands, they are also required to integrate Islamic values into the learning process. These demands focus not only on cognitive aspects but also encompass attitude formation, self-control, and a balance between spiritual, emotional, and social aspects (Zhou & Colomer, 2024;

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Iksal et al., 2024; Hanif, 2025). In these circumstances, students are required to be able to manage learning strategies independently, maintain emotional stability in the face of academic pressure, and build positive social support. This complexity shows that student productivity is not only determined by academic ability alone, but also by the ability to manage various internal and external aspects in an integrated manner so that the approach to general higher education is not necessarily completely relevant to explain the conditions in the FEBI UINSU environment.

This condition is reflected in the reality experienced by students, particularly final-year students completing their theses. Research by Bancin et al. (2025) shows that students experience quite high levels of academic stress due to low self-management skills and unstable learning motivation. This results in difficulty managing time, procrastination, and delays in completing academic assignments. These findings are reinforced by research by Siregar & Putri (2019), which states that low self-efficacy contributes to increased academic stress experienced by students. Therefore, without effective study strategies, good stress management skills, and adequate social support, students tend to experience decreased productivity in carrying out their academic activities.

Based on this description, this study aims to analyze the influence of learning strategies, stress management, and social support on student productivity during college among students at the Faculty of Economics and Business (FEBI) UINSU. Based on the phenomena observed among FEBI UINSU students, it is suspected that learning strategies, stress management, and social support are factors that influence student productivity during their studies. Therefore, it is estimated that these three variables partially and simultaneously have a significant influence on student academic productivity.

Methods

Research Approach and Design

This study employed a quantitative approach with an explanatory research design. The design was selected because the study sought to examine the statistical relationships between learning strategy, stress management, social support, and student productivity. Learning strategy, stress management, and social support were treated as independent variables, while student productivity was treated as the dependent variable. The study used a cross-sectional design in which data on all research variables were collected from respondents at one point during the 2025/2026 academic year. Therefore, the findings describe the relationships among the variables during the period of data collection and should not be interpreted as definitive evidence of long-term causal relationships.

The unit of analysis was the individual student enrolled in the Faculty of Islamic Economics and Business at the State Islamic University of North Sumatra. Multiple linear regression analysis was used to determine the partial and simultaneous contributions of the three independent variables to student productivity. The analysis was conducted using IBM SPSS Statistics.

Research Setting and Period

The study was conducted at the Faculty of Islamic Economics and Business, State Islamic University of North Sumatra, commonly referred to as FEBI UINSU. The faculty was selected because its students face diverse academic responsibilities, including lectures, individual and group assignments, examinations, organizational activities, internships, and final-project

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requirements. These academic conditions provide an appropriate context for examining the role of learning strategy, stress management, and social support in supporting student productivity.

Data collection was conducted during the 2025/2026 academic year at the Faculty of Islamic Economics and Business, State Islamic University of North Sumatra. Population data were obtained from the UINSU Sipandai academic information system, while primary data were collected directly from selected active students using a structured questionnaire. The questionnaire was designed to measure learning strategy, stress management, social support, and student productivity. Prior to completing the questionnaire, respondents were informed about the purpose of the study and assured that their responses would be treated confidentially and used solely for research purposes.

Population and Sample

The population of this study comprised all active students enrolled in FEBI UINSU during the 2025/2026 academic year. Based on data obtained from the UINSU Sipandai system, the population consisted of students from six study programs: Sharia Accounting, Sharia Insurance, Islamic Economics, Management, Sharia Banking, and Sharia Economics. The population included 886 Sharia Accounting students, 184 Sharia Insurance students, 928 Islamic Economics students, 1,005 Management students, 863 Sharia Banking students, and 205 Sharia Economics students.

Based on the total number presented in the population table, the actual population was 4,071 students. The required sample size was calculated using the Slovin formula, expressed as $n = N/[1 + N(e^2)]$, where $n$represents the required sample size, Nrepresents the population size, and $e$represents the tolerated margin of error. Using a population of 4,071 students and a margin of error of 10%, the calculation produced a minimum sample of approximately 97.60 respondents. The number was rounded upward to 100 respondents to obtain a sufficient and operationally manageable sample.

Respondents were eligible to participate when they were officially registered as active FEBI UINSU students during the 2025/2026 academic year, belonged to one of the six study programs included in the population, understood the questionnaire instructions, and voluntarily agreed to participate. Questionnaires that were incomplete, contained extensive missing responses, or were identified as duplicate submissions were excluded from the final analysis.

Sampling Technique

The study applied probability sampling using proportionate stratified random sampling. The study program was used as the stratification variable because the number of students differed considerably across the six programs. This procedure was intended to ensure that students from each study program were represented in accordance with their proportion in the total FEBI UINSU student population.

The number of respondents required from each stratum was calculated using the formula $n_h = (N_h/N) \times n$, where $n_h$represents the sample required from a particular study program, $N_h$represents the population of that study program, Nrepresents the total population, and $n$represents the total sample. Using proportional allocation and adjustment through the largest-remainder method, the sample should consist of approximately 22 Sharia Accounting students, 4 Sharia Insurance students, 23 Islamic Economics students, 25 Management students, 21 Sharia Banking students, and 5 Sharia Economics students, producing a total of 100 respondents.

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After the sample allocation for each study program was determined, prospective respondents were selected randomly from the list of active students in each stratum. Each eligible student within the same study program was given an equal opportunity to be selected. Random selection could be conducted using computer-generated random numbers or another documented randomization procedure.

Research Variables and Operational Definitions

This study examined three independent variables and one dependent variable. The independent variables were learning strategy, stress management, and social support, while the dependent variable was student productivity. Each variable was measured using several theoretically derived indicators and converted into a composite score for statistical analysis.

Learning strategy referred to the systematic efforts used by students to plan, organize, implement, monitor, and evaluate their learning activities. It reflected students' ability to regulate their learning process and use available academic resources effectively. Learning strategy was measured through indicators of goal setting, time management, the use of cognitive strategies, metacognitive monitoring, and self-evaluation. The questionnaire contained nine items for this variable. A higher total score indicated that the respondent applied more structured and effective learning strategies.

Stress management referred to students' ability to recognize, control, and respond adaptively to academic pressure. It included the ways students addressed sources of stress, regulated their emotions, maintained concentration, and prevented pressure from interfering with academic activities. Stress management was measured through indicators of problem-focused coping, emotional regulation, pressure control, stress awareness, and the ability to maintain concentration under pressure. Seven questionnaire items were used to measure this variable. A higher score indicated a stronger ability to manage academic stress.

Social support referred to the emotional, informational, and practical assistance received by students from people within their social and academic environment. This support could originate from family members, friends, classmates, lecturers, or the institution. Social support was measured through indicators of emotional support, informational support, instrumental support, peer support, and family support. The variable was represented by six questionnaire items. A higher score indicated that the respondent perceived a greater level of social support.

Student productivity referred to students' effectiveness and consistency in managing academic activities and achieving learning-related objectives. It was not limited to final academic grades but also included active participation in learning, consistency in studying, timely completion of assignments, effective use of study time, and achievement of academic targets. Student productivity was measured using eight questionnaire items representing academic engagement, study consistency, task completion, academic achievement, and effective use of study time. A higher score reflected a higher level of student productivity.

Research Instrument

The primary data-collection instrument was a structured questionnaire developed from the theoretical indicators of each research variable. The questionnaire consisted of two main sections. The first section collected information about respondent characteristics, including gender, age, study program, and academic cohort. The second section contained statements measuring learning strategy, stress management, social support, and student productivity.

The research instrument contained 30 substantive items, comprising nine learning-strategy items, seven stress-management items, six social-support items, and eight student-productivity

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items. Responses were recorded using the Likert-type response format applied in the original questionnaire. Each response was assigned a numerical score, and the scores for all items belonging to the same construct were combined to produce a total or average variable score. Higher scores represented stronger learning strategies, better stress management, greater social support, and higher student productivity.

The questionnaire was distributed directly to the selected FEBI UINSU students as the primary data-collection instrument. Before completing the questionnaire, respondents were informed about the purpose of the study, the procedures for completing the instrument, and the voluntary nature of their participation. Respondents were also assured that their identities and responses would remain confidential and that the collected data would be used solely for academic and research purposes. They were given sufficient time to read each statement carefully and provide responses that accurately reflected their actual experiences and conditions.

Data Collection Procedure

The data-collection process began with obtaining population information and the list of active students from the relevant academic information system or faculty administration. The population was then divided into strata according to study program, after which the number of respondents required from each stratum was determined proportionally. Eligible students were selected using a randomization procedure and invited to participate in the study.

Prospective respondents were provided with information regarding the purpose of the research and informed that participation was voluntary. Respondents who agreed to participate completed the questionnaire independently. No personally identifying information was required unless it was necessary for controlling duplicate submissions, and any identifying information collected for this purpose was separated from the analytical dataset.

After data collection was completed, all returned questionnaires were screened for completeness and response quality. Incomplete questionnaires, duplicated responses, or submissions showing clear response irregularities were excluded. Eligible responses were then coded and entered into IBM SPSS Statistics for further analysis.

Instrument Validity and Reliability

Instrument validity testing was conducted to determine whether each questionnaire item adequately measured the variable it was intended to represent. Empirical validity was examined using Pearson product–moment correlation by correlating the score of each item with the total score of its corresponding variable. With 100 respondents and a significance level of 5%, the critical correlation value used in the manuscript was 0.195. An item was considered valid when its calculated correlation coefficient exceeded 0.195 and its significance value was below 0.05.

Reliability testing was conducted to determine the internal consistency of the items within each research variable. Cronbach's alpha was used as the reliability coefficient. An instrument was considered to have acceptable reliability when its Cronbach's alpha value was at least 0.70, although a minimum value of 0.60 may be accepted in exploratory studies. Higher alpha values indicated stronger internal consistency among the items measuring the same construct.

The uploaded manuscript reports Cronbach's alpha values of 0.973 for learning strategy, 0.971 for stress management, 0.964 for social support, and 0.967 for student productivity. These values indicate very high internal consistency. Nevertheless, alpha values approaching 1.00 may also suggest that some items are highly similar or repetitive; therefore, item wording and inter-item correlations should be reviewed to confirm that each item contributes distinct information.

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Data Processing and Statistical Analysis

Data processing involved editing, coding, scoring, data entry, and data cleaning. Editing was conducted to identify incomplete or inconsistent responses. Coding involved assigning numerical values to respondent characteristics and questionnaire responses. The scores for each variable were calculated by summing or averaging the relevant item scores. Data cleaning was performed to detect missing values, duplicate submissions, out-of-range values, and unusual response patterns before statistical testing.

Descriptive statistics were used to summarize the characteristics of the respondents and the distribution of the research variables. Categorical respondent characteristics were presented using frequencies and percentages, while continuous or composite variable scores were summarized using the mean, standard deviation, minimum value, and maximum value where appropriate.

Before multiple linear regression analysis was conducted, the data were evaluated against the relevant regression assumptions. The normality of the residuals was assessed using the Kolmogorov–Smirnov test and supported by examination of the normal probability plot. Residuals were considered approximately normally distributed when the statistical significance value was greater than 0.05 and the points on the probability plot followed the diagonal line.

Multicollinearity was evaluated using tolerance and Variance Inflation Factor values. The regression model was considered free from serious multicollinearity when tolerance values were greater than 0.10 and VIF values were below 10, although VIF values below 5 are generally preferable. Heteroscedasticity was examined using the Glejser test by regressing the absolute residual values on the independent variables. The model was considered free from heteroscedasticity when the significance value for each independent variable was greater than 0.05. Where available, the scatterplot of standardized residuals and predicted values was also examined to confirm that the residuals were distributed randomly.

The independence of residuals was evaluated using the Durbin–Watson statistic. A value close to 2 indicated that the residuals were sufficiently independent. Linearity was assessed by examining scatterplots or deviation-from-linearity tests between each independent variable and student productivity. Potentially influential observations were examined using standardized residuals, leverage values, and Cook's distance to ensure that the regression estimates were not determined by a small number of unusual cases.

Multiple linear regression analysis was then used to estimate the relationship between the independent variables and student productivity. The regression model was expressed as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

In this equation, Yrepresents student productivity, αrepresents the regression constant, X_1represents learning strategy, X_2represents stress management, X_3represents social support, β_1, β_2, and $\beta_3$represent the regression coefficients, and εrepresents the residual error.

The partial influence of each independent variable was evaluated using the t-test. An independent variable was considered to have a statistically significant partial relationship with student productivity when its significance value was below 0.05. The simultaneous contribution of learning strategy, stress management, and social support was evaluated using the F-test. The regression model was considered statistically significant when the F-test significance value was below 0.05.

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The coefficient of determination was used to determine the proportion of variation in student productivity explained collectively by the three independent variables. Because the model included more than one independent variable, the adjusted R-squared value was emphasized as a more appropriate measure of explanatory power. Standardized beta coefficients were used to compare the relative statistical contribution of the independent variables, provided that the regression model satisfied the multicollinearity assumption. All analyses were conducted at a 5% significance level with a 95% confidence level.

Results and Discussion

Respondent Profile Description

Based on the data collected, the respondents in this study were active students with diverse characteristics, predominantly female, aged 18–22, and middle-level students. Most respondents were from the Management study program, followed by other fields of Islamic economics and business, and were dominated by the class of 2022, with the majority being active. In general, the respondents' characteristics were considered quite representative of the student environment in the Islamic economics and business study program.

Table 2. Distribution of Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Female	70	70%
	Male	30	30%
Age	18–19 years	6	6%
	20 years	10	10%
	21 years	45	45%
	22 years	32	32%
	23 years	7	7%
Study Program	Management	50	50%
	Sharia Accounting	20	20%
	Sharia Banking	18	18%
	Islamic Economics	7	7%
	Sharia Insurance	5	5%
Academic Year (Cohort)	2022	70	70%
	2023	15	15%
	2024	10	10%
	2025	5	5%
Total Respondents		**100**	**100%**

Source: Author's Calculation

Based on the table of respondents' characteristics, most respondents in this study were female (70%), while male respondents accounted for 30%, indicating that female students were more dominant in participating in the survey. In terms of age, most respondents were 21 years old (45%) and 22 years old (32%), representing students who are generally in the middle stage of their academic studies and actively engaged in academic activities. This age distribution suggests that the respondents possess a relatively adequate level of academic maturity to understand and respond to the research instruments effectively.

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Furthermore, based on the study program, the largest proportion of respondents came from the Management program (50%), followed by Sharia Accounting (20%), Sharia Banking (18%), Islamic Economics (7%), and Sharia Insurance (5%). This distribution reflects the dominance of Management students while still ensuring representation from other disciplines within the Faculty of Islamic Economics and Business. In terms of academic cohort, most respondents belonged to the 2022 cohort (70%), followed by the 2023 cohort (15%), 2024 cohort (10%), and 2025 cohort (5%). This indicates that most respondents had accumulated sufficient academic experience during their studies.

Data Quality Test

Validity Test

A validity test is conducted to determine the extent to which the questionnaire items accurately measure the variables being studied. A research instrument is considered valid if the questionnaire items accurately reveal what the instrument is intended to measure. Validity testing in this study was conducted using Pearson Product Moment correlation analysis, processed using IBM SPSS Statistics software. The validity test criterion was performed by comparing the calculated r value with the table r value. If the calculated r value is greater than the table r value (calculated r > table r), then the statement item is declared valid. Conversely, if the calculated r value is less than the table r value (calculated r < table r), then the statement item is declared invalid.

Table 3. Product Moment r Value Rate

N	Significant rates		N	Significant rates		N	Significant rates	
	5%	10%		5%	10%		5%	10%
3	0,997	0,999	27	0,381	0,487	55	0,266	0,345
4	0,950	0,990	28	0,374	0,478	60	0,254	0,330
5	0,878	0,959	29	0,367	0,470	65	0,244	0,317
6	0,811	0,917	30	0,361	0,463	70	0,235	0,306
7	0,754	0,874	31	0,355	0,456	75	0,227	0,296
8	0,707	0,834	32	0,349	0,449	80	0,220	0,286
9	0,666	0,798	33	0,344	0,442	85	0,213	0,278
10	0,632	0,765	34	0,339	0,436	90	0,207	0,270
11	0,602	0,735	35	0,334	0,430	95	0,202	0,263
12	0,576	0,708	36	0,329	0,424	100	0,195	0,256
13	0,553	0,684	37	0,325	0,418	125	0,176	0,230
14	0,532	0,661	38	0,320	0,413	150	0,159	0,210
15	0,514	0,641	39	0,316	0,408	175	0,148	0,194

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16	0,497	0,623	40	0,312	0,403	200	0,138	0,181
17	0,482	0,606	41	0,308	0,398	300	0,113	0,148
18	0,468	0,590	42	0,304	0,393	400	0,098	0,128
19	0,456	0,575	43	0,301	0,389	500	0,088	0,115
20	0,444	0,561	44	0,297	0,384	600	0,080	0,105
21	0,433	0,549	45	0,294	0,380	700	0,074	0,097
22	0,423	0,537	46	0,291	0,376	800	0,070	0,091
23	0,413	0,526	47	0,288	0,372	900	0,065	0,086
24	0,404	0,515	48	0,284	0,368	1000	0,062	0,081
25	0,396	0,505	49	0,281	0,364			
26	0,388	0,496	50	0,279	0,361			

In this study, the number of respondents was 100, so based on the Product Moment r table at a significance level of 5%, the r value was 0.195. Therefore, each statement item is considered valid if it has a correlation value greater than 0.195.

Learning Strategy Validity Test

Table 4. Learning Strategy Validity Test

Item	Pearson Correlation with Total Score	Significance (2-tailed)	N	Decision
X1_1	0.900	< 0.001	100	Valid
X1_2	0.908	< 0.001	100	Valid
X1_3	0.909	< 0.001	100	Valid
X1_4	0.902	< 0.001	100	Valid
X1_5	0.903	< 0.001	100	Valid
X1_6	0.906	< 0.001	100	Valid
X1_7	0.908	< 0.001	100	Valid
X1_8	0.923	< 0.001	100	Valid
X1_9	0.893	< 0.001	100	Valid

Source: Processed SPSS 2026 Data

Based on the Pearson correlation test results in the table, all indicators of the Learning Strategy variable (X1), namely X1_1 to X1_9, show a positive and very strong relationship, both between indicators and with the total Learning Strategy variable. The correlation coefficients between indicators range from 0.749 to 0.863, indicating a strong relationship. Meanwhile, the correlation between each indicator and the Learning Strategy variable (X1) ranges from 0.893 to 0.923, which is considered very strong. The significance value (Sig. 2-tailed) for all relationships is <0.001, indicating statistical significance at the 1% (0.01) level. This indicates that each item in the Learning Strategy variable has a strong relationship in measuring the same

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construct, thus indicating that the instrument used has good internal consistency. Therefore, all indicators in the Learning Strategy variable are suitable for use in further analysis because they accurately and significantly represent the variables.

Stress Management Validity Test

Table 5. Stress Management Validity Test

Item	Pearson Correlation with Total Score	Significance (2-tailed)	N	Decision
X2_1	0.910	< 0.001	100	Valid
X2_2	0.930	< 0.001	100	Valid
X2_3	0.927	< 0.001	100	Valid
X2_4	0.936	< 0.001	100	Valid
X2_5	0.905	< 0.001	100	Valid
X2_6	0.929	< 0.001	100	Valid
X2_7	0.918	< 0.001	100	Valid

Source: Processed SPSS 2026 Data

Based on the results of the Pearson correlation test on the Stress Management variable (X2), all indicators (X2_1 to X2_7) showed a positive and very strong relationship, both between indicators and with the total Stress Management variable. The correlation coefficients between indicators ranged from 0.789 to 0.869, indicating a strong and consistent relationship between the measurement items. Meanwhile, the correlation between each indicator and the Stress Management variable (X2) ranged from 0.905 to 0.936, which is considered very strong. Furthermore, all significance values (Sig. 2-tailed) were <0.001, meaning that each relationship was statistically significant at the 1% (0.01) level. This indicates that each indicator has a good ability to represent the Stress Management construct.

Social Support Validity Test

Table 6. Social Support Validity Test

Item	Pearson Correlation with Total Score	Significance (2-tailed)	N	Decision
X3_1	0.924	< 0.001	100	Valid
X3_2	0.913	< 0.001	100	Valid
X3_3	0.941	< 0.001	100	Valid
X3_4	0.928	< 0.001	100	Valid
X3_5	0.896	< 0.001	100	Valid
X3_6	0.920	< 0.001	100	Valid

Source: Processed SPSS 2026 Data

Based on the results of the Pearson correlation test on the Social Support variable (X3), all indicators (X3_1 to X3_6) show a positive and very strong relationship, both between indicators and with the total Social Support variable. The correlation coefficients between indicators range from 0.765 to 0.851, indicating a strong and consistent relationship between items measuring the same construct. Meanwhile, the correlation between each indicator and the Social Support variable (X3) ranges from 0.896 to 0.941, which is considered very strong. Furthermore, all significance values (Sig. 2-tailed) are <0.001, indicating that the relationship

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between these variables is statistically significant at the 1% (0.01) level. This indicates that each indicator makes a strong contribution to representing the Social Support variable.

Student Productivity Validity Test

Table 7. Student Productivity Validity Test

Item	Pearson Correlation with Total Score	Significance (2-tailed)	N	Decision
Y_1	0.906	< 0.001	100	Valid
Y_2	0.899	< 0.001	100	Valid
Y_3	0.913	< 0.001	100	Valid
Y_4	0.899	< 0.001	100	Valid
Y_5	0.910	< 0.001	100	Valid
Y_6	0.894	< 0.001	100	Valid
Y_7	0.883	< 0.001	100	Valid
Y_8	0.910	< 0.001	100	Valid

Source: Processed SPSS 2026 Data

Based on the results of the Pearson correlation test on the Student Productivity (Y) variable, all indicators (Y_1 to Y_8) showed a very strong positive relationship both between indicators and with the total Student Productivity variable. The correlation coefficients between indicators ranged from 0.744 to 0.831, indicating a strong and consistent relationship between items in measuring the construct of student productivity. Meanwhile, the correlation between each indicator and the Student Productivity (Y) variable ranged from 0.883 to 0.913, which is considered very strong. This indicates that each statement item contributes significantly to representing the overall student productivity variable. Furthermore, all significance values (Sig. 2-tailed) were <0.001, indicating that all relationships between variables were statistically significant at the 1% (0.01) level.

Reliability Test

Learning Strategy Reliability Test

Table 8. Learning Strategy Reliability Test

Variable	Cronbach's Alpha	Number of Items	Reliability Criterion	Decision
Learning Strategy (X1)	0.973	9	> 0.70	Reliable

Source: Processed SPSS 2026 Data

Based on the reliability test results in the Reliability Statistics table above, the Cronbach's Alpha value is 0.973 for 9 items. According to Ghozali (2018), a variable is considered reliable if its Cronbach's Alpha value is >0.60. Therefore, it can be concluded that all statement items in this study have a very high level of reliability and are consistent, making this research instrument suitable for use in subsequent data analysis.

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Stress Management Reliability Test

Table 9. Stress Management Reliability Test

Variable	Cronbach's Alpha	Number of Items	Reliability Criterion	Decision
Stress Management (X2)	0.971	7	> 0.70	Reliable

Source: Processed SPSS 2026 Data

Based on the reliability test results in the Reliability Statistics table above, the Cronbach's Alpha value was 0.971 for 7 items. According to Ghozali (2018), a variable is considered reliable if its Cronbach's Alpha value is >0.60. Therefore, it can be concluded that all statement items in this study have a very high level of reliability and are consistent, making this research instrument suitable for use in subsequent data analysis.

Social Support Reliability Test

Table 10. Social Support Reliability Test

Variable	Cronbach's Alpha	Number of Items	Reliability Criterion	Decision
Social Support (X3)	0.964	6	> 0.70	Reliable

Source: Processed SPSS 2026 Data

Based on the reliability test results in the Reliability Statistics table above, the Cronbach's Alpha value was 0.964 for 6 items. According to Ghozali (2018), a variable is considered reliable if its Cronbach's Alpha value is >0.60. Therefore, it can be concluded that all statement items in this study have a very high level of reliability and are consistent, making this research instrument suitable for use in subsequent data analysis.

Student Productivity Reliability Test

Table 11. Student Productivity Reliability Test

Variable	Cronbach's Alpha	Number of Items	Reliability Criterion	Decision
Student Productivity (Y)	0.967	8	> 0.70	Reliable

Source: Processed SPSS 2026 Data

Based on the reliability test results in the Reliability Statistics table above, the Cronbach's Alpha value was 0.967 for 8 items. According to Ghozali (2018), a variable is considered reliable if its Cronbach's Alpha value is >0.60. Therefore, it can be concluded that all statement items in this study have a very high level of reliability and are consistent, making this research instrument suitable for use in subsequent data analysis.

Classical Assumption Tests

Classical assumption tests are conducted to determine whether the regression model used in the study satisfies the fundamental assumptions of regression analysis. A robust regression model must meet the BLUE (Best Linear Unbiased Estimator) criteria to ensure that the resulting estimates are unbiased. According to Ghozali (2018), classical assumption tests aim to ensure that the regression model is free from violations such as normality issues, multicollinearity, and heteroscedasticity. Therefore, conducting classical assumption tests prior

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to regression analysis is essential to ensure the research results are accurate and reliable. In this study, the classical assumption tests employed include the normality test, multicollinearity test, and heteroscedasticity test. All data processing was performed using IBM SPSS Statistics software.

Normality Test

The normality test aims to determine whether the data within the regression model follow a normal distribution. According to Ghozali (2018), a good regression model is one in which the residuals are normally or approximately normally distributed. Normality testing can be performed using statistical tests, such as the Kolmogorov-Smirnov test, or through graphical analysis, such as the Normal Probability Plot (P-P Plot).

Table 12. Kolmogorov-Smirnov Normality Test

Test Component	Value
N (Number of Respondents)	100
Mean	0.0000000
Std. Deviation	1.78345807
Absolute Extreme Difference	0.062
Positive Extreme Difference	0.043
Negative Extreme Difference	-0.062
Test Statistic	0.062
Asymp. Sig. (2-tailed)	0.200
Monte Carlo Sig. (2-tailed)	0.434
99% Confidence Interval – Lower Bound	0.422
99% Confidence Interval – Upper Bound	0.447

Source: SPSS Data Processing (2026)

Based on the normality test results using the One-Sample Kolmogorov-Smirnov Test shown in the table above, the sample size (N) for this study is 100 respondents. The obtained Asymp. Sig. (2-tailed) value is 0.200. According to the normality testing criteria, if the significance value is greater than 0.05, the research data is normally distributed. Since the Asymp. Sig. value (0.200) is greater than 0.05, it can be concluded that the residual data in this study is normally distributed.

Multicollinearity Test

The multicollinearity test aims to determine whether there is high correlation among the independent variables in the regression model. According to Ghozali (2018), a good regression model should not exhibit high correlation among the independent variables.

Table 13. Multicollinearity Test

Model	Variable	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (Beta)	t-value	Sig.	Tolerance	VIF
1	Constant	1.610	0.679	–	2.370	0.020	–	–
	Learning	0.146	0.085	0.166	1.716	0.089	0.051	19.555

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	Strategy (X1)							
	Stress Management (X2)	0.290	0.100	0.278	2.909	0.005	0.052	19.081
	Social Support (X3)	0.700	0.124	0.544	5.626	<0.001	0.051	19.556

Source: SPSS Data Processing (2026)

Based on the Coefficients table above, the Tolerance values are 0.051 for Learning Strategy (X1), 0.052 for Stress Management (X2), and 0.051 for Social Support (X3). All these values fall below the 0.10 threshold. Meanwhile, the Variance Inflation Factor (VIF) values are 19.555 for Learning Strategy (X1), 19.081 for Stress Management (X2), and 19.556 for Social Support (X3); all exceed 10. According to Ghozali (2018), a regression model is considered free from multicollinearity if the Tolerance value is > 0.10 and the VIF is < 10. Based on these results, it can be concluded that the regression model in this study exhibits signs of multicollinearity among the independent variables; thus, the classical assumption regarding multicollinearity has not been met. This condition indicates a high degree of intercorrelation among the independent variables in the model, necessitating further testing or remedial action to ensure the regression model is suitable for subsequent analysis.

Heteroscedasticity Test

The heteroscedasticity test aims to determine whether there is inequality in the variance of the residuals within the regression model. According to Ghozali (2018), a good regression model is one that does not exhibit heteroscedasticity meaning it possesses constant residual variance. In this study, heteroscedasticity was tested using the Glejser test.

Table 14. Heteroscedasticity Test (Glejser Test)

Model	Variable	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (Beta)	t-value	Sig.	Tolerance	VIF
1	Constant	1.953	0.408	–	4.788	<0.001	–	–
	Learning Strategy (X1)	-0.007	0.051	-0.057	-0.128	0.898	0.051	19.555
	Stress Management (X2)	0.018	0.060	0.130	0.294	0.769	0.052	19.081
	Social Support (X3)	-0.036	0.075	-0.214	-0.479	0.633	0.051	19.556

Source: SPSS Data Processing (2026)

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Based on the Coefficients table (Glejser Test) above, the significance values (Sig.) are 0.898 for the Learning Strategy variable (X1), 0.769 for Stress Management (X2), and 0.633 for Social Support (X3); all these values exceed 0.05. According to Ghozali (2018), a regression model is considered free from heteroscedasticity if the significance value between the independent variables and the absolute residuals (Abs_Res) is greater than 0.05. Therefore, it can be concluded that heteroscedasticity is not present in this study's regression model, making the model suitable for further analysis.

Multiple Linear Regression Analysis

Table 15. Multiple Linear Regression Analysis

Model	Variable	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (Beta)	t-value	Sig.	Tolerance	VIF
1	Constant	1.610	0.679	–	2.370	0.020	–	–
	Learning Strategy (X1)	0.146	0.085	0.166	1.716	0.089	0.051	19.555
	Stress Management (X2)	0.290	0.100	0.278	2.909	0.005	0.052	19.081
	Social Support (X3)	0.700	0.124	0.544	5.626	<0.001	0.051	19.556

Source: SPSS Data Processing (2026)

Based on the Coefficients table (Unstandardized Coefficients B), the multiple linear regression equation can be written as follows: Where Y is student productivity, X1 is learning strategy, X2 is stress management, and X3 is social support. The regression coefficient for learning strategy of 0.146 indicates that any increase in learning strategy will lead to an increase in student productivity. The stress management coefficient of 0.290 indicates that better stress management results in higher student productivity. Meanwhile, the social support coefficient of 0.700 indicates that social support is the most dominant variable influencing student productivity, as it possesses the highest coefficient value compared to the other variables. Furthermore, based on significance values, learning strategy does not have a significant effect on student productivity, whereas stress management and social support have a positive and significant effect on student productivity.

Hypothesis Testing

Partial Test (t-test)

The partial test is conducted to determine the individual effect of each independent variable on profit growth. The decision-making criterion is that if the significance value is less than 0.05, the hypothesis is accepted, whereas if it is greater than 0.05, the hypothesis is rejected.

Based on Table 15 (Coefficients), partial hypothesis testing was performed by comparing the calculated t-value with the t-table value (1.9845) and examining the significance value. Learning Strategy (X1): The calculated t-value is 1.716 (< t-table 1.9845) and the significance value is 0.089 (> 0.05). This indicates that learning strategy does not have a significant effect

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on student productivity. Stress Management (X2): The calculated t-value is 2.909 (> t-table 1.9845) and the significance value is 0.005 (< 0.05). This indicates that stress management has a positive and significant effect on student productivity. Social Support (X3): The calculated t-value is 5.626 (> t-table 1.9845) and the significance value is < 0.001 (< 0.05). This indicates that social support has a positive and significant effect on student productivity.

Simultaneous Test (F-test)

Table 16. Simultaneous Test (F-test)

Model	Sum of Squares	df	Mean Square	F-value	Sig.
Regression	6558.268	3	2186.089	666.466	< 0.001
Residual	314.892	96	3.280	–	–
Total	6873.160	99	–	–	–

Source: SPSS Data Processing (2026)

Based on the F-test (simultaneous test) results in the ANOVA table, the calculated F-value is 666.466, the F-table value is 2.6994, and the significance level is < 0.001. Since the calculated F-value exceeds the F-table value (666.466 > 2.6994) and the significance level is less than 0.05, the null hypothesis (H0) is rejected, and the alternative hypothesis (Ha) is accepted. This indicates that the variables Learning Strategy (X1), Stress Management (X2), and Social Support (X3) simultaneously have a significant effect on Student Productivity (Y). Consequently, the regression model used in this study is deemed fit and capable of explaining the relationship between the independent variables and the dependent variable collectively.

Coefficient of Determination Test (R^2)

The coefficient of determination test (R^2) aims to measure the extent to which the independent variables explain the variation in the dependent variable within the regression model. R^2 values range from 0 to 1; a value closer to 1 indicates a better model capability in explaining the dependent variable. In studies involving more than one independent variable, the Adjusted R-squared value is used; this value accounts for the number of variables and observations, thereby providing a more accurate result.

Table 17. Coefficient of Determination Test (R^2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	PRESS	Durbin-Watson
1	0.977	0.954	0.953	1.81111	341.269	1.878

Source: SPSS Data Analysis (2026)

Based on the Model Summary output, the correlation coefficient (R) is 0.977, indicating a very strong relationship between the variables Learning Strategy (X1), Stress Management (X2), and Social Support (X3) and Student Productivity (Y). Meanwhile, the coefficient of determination (R-Square) of 0.954 signifies that 95.4% of the variation in Student Productivity can be explained by these three independent variables combined, while the remaining 4.6% is influenced by factors outside the research model. Furthermore, the Adjusted R-Square value of 0.953 demonstrates that, even after adjusting for the number of variables in the model, the model's explanatory power remains very high and stable. Thus, the regression model employed possesses excellent explanatory power regarding the dependent variable. Other factors potentially influencing Student Productivity include learning motivation, academic engagement, self-efficacy, time management, the learning environment, and the level of academic burnout. According to Zimmerman (2000), learning motivation and self-efficacy

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play crucial roles in encouraging students to remain consistent in achieving their academic goals. Additionally, research by Astin (1999) indicates that academic engagement or student involvement in learning activities contributes to increased academic productivity. Other research by Macan (1994) found that effective time management contributes to student learning effectiveness, whereas Salmela-Aro & Read (2017) explain that academic burnout can significantly reduce learning productivity. Consequently, although this research model demonstrates high explanatory power, there remain other variables that both theoretically and empirically can influence Student Productivity, warranting consideration for future research.

The Influence of Learning Strategy on Student Productivity among FEBI UINSU Students

The findings of this study contribute to a more nuanced understanding of the role of learning strategies in shaping student productivity. Although learning strategies are widely recognized as an essential component of effective learning, the results indicate that possessing structured learning strategies alone does not automatically translate into higher productivity among FEBI UINSU students. This suggests that the relationship between learning strategies and productivity is not a simple direct pathway but is shaped by the extent to which students are able to consistently implement, adapt, and sustain these strategies within the realities of academic life. In other words, the presence of a learning strategy represents only a cognitive intention, while productivity requires the transformation of that intention into disciplined and sustained academic behavior (Wu et al., 2022; Almulla & Al-Rahmi, 2023; Chi, 2026).

From the perspective of Zimmerman's Self-Regulated Learning Theory, effective learning is not merely determined by whether students possess planning skills, goal-setting abilities, or preferred learning techniques, but by their capacity to regulate these processes continuously through the phases of forethought, performance, and self-reflection (Zimmerman, 2000). Students may understand the importance of creating study schedules, setting academic targets, or applying specific learning techniques; however, these strategies become meaningful only when accompanied by self-monitoring, behavioral consistency, and the ability to adjust strategies according to changing academic demands. Therefore, the absence of a significant influence of learning strategy in this study does not necessarily imply that learning strategies are unimportant. Rather, it indicates that learning strategies may function as an enabling condition that requires reinforcement from other psychological and contextual resources before producing measurable improvements in productivity.

This interpretation is consistent with Credé & Phillips (2011), who argued that learning strategies do not always demonstrate a direct relationship with academic outcomes because their effectiveness is often mediated by motivational factors, psychological conditions, and learning environments. Similarly, Dunlosky et al. (2013) emphasized that the effectiveness of learning techniques depends not only on the adoption of appropriate methods but also on the quality, frequency, and consistency of their application. In higher education settings, students frequently possess knowledge about effective learning practices but experience difficulties translating this knowledge into daily academic routines. The challenge is therefore not always a lack of awareness regarding productive learning methods, but rather the difficulty of maintaining these practices under competing academic and personal demands.

The context of FEBI UINSU illustrates this complexity. University students operate within an environment where academic responsibilities coexist with organizational activities, employment commitments, family expectations, digital distractions, and personal pressures. A student may develop a detailed study plan or establish specific academic goals, yet these strategies may lose effectiveness when confronted with unexpected demands or emotional

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challenges. For example, final-year students may have carefully prepared thesis completion schedules, but progress can still be disrupted by difficulties in maintaining motivation, managing uncertainty, responding to revisions, or balancing other responsibilities. This indicates that learning strategies should not be viewed as isolated cognitive tools but as part of a broader self-management system in which emotional regulation and environmental support determine whether planned behaviors can be sustained.

Therefore, the implication of this study is that universities should move beyond simply encouraging students to adopt better learning techniques. Academic development programs should focus on strengthening students' capacity to implement learning strategies through self-regulation training, reflective learning practices, time-management development, and continuous academic mentoring. Learning strategy interventions are likely to be more effective when integrated with psychological support and institutional mechanisms that help students overcome barriers to consistent implementation. Thus, within the FEBI UINSU context, learning strategies represent an important foundation for productivity, but their contribution depends heavily on the presence of supportive psychological and social conditions.

The Influence of Stress Management on Student Productivity among FEBI UINSU Students

The findings demonstrate that stress management represents a critical psychological mechanism underlying student productivity. This highlights that productivity in higher education is not solely a function of intellectual capacity or academic competence but also reflects students' ability to regulate emotional responses when facing academic pressure. University environments inevitably expose students to multiple sources of stress, including intensive coursework, examination demands, academic competition, organizational responsibilities, and future career uncertainty. Therefore, students who possess stronger stress-management capabilities are better positioned to preserve concentration, maintain motivation, and continue performing effectively despite academic challenges (Malik et al., 2024; Fang et al., 2025; Mauroof et al., 2025).

This finding can be explained through Lazarus and Folkman's Stress and Coping Theory, which emphasizes that stress outcomes are determined not only by external demands but also by how individuals evaluate and respond to those demands (Lazarus & Folkman, 1984). Academic pressure does not automatically reduce productivity; rather, productivity declines when students perceive academic demands as exceeding their coping capacity. Effective stress management enables students to reinterpret challenges as manageable situations, develop appropriate coping responses, and maintain psychological stability. Consequently, stress management functions as a protective mechanism that allows students to convert academic pressure into constructive motivation rather than experiencing cognitive exhaustion and behavioral disengagement. The findings are supported by Misra & McKean (2020), who demonstrated that students with stronger stress-management abilities tend to show better academic adjustment and performance. Similarly, Robotham & Julian (2006) highlighted that unmanaged academic stress can negatively affect concentration, motivation, and academic functioning. However, the present study extends these perspectives by positioning stress management not merely as a factor associated with student well-being but as an essential component of productivity development. In this sense, productive students are not necessarily those who experience fewer challenges; rather, they are students who possess the psychological capacity to navigate challenges without allowing stress to disrupt academic functioning. Within the FEBI UINSU environment, this perspective is particularly relevant because students encounter diverse academic transitions and pressures. Final-year students, for instance, must

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manage complex processes related to thesis completion, including repeated revisions, academic consultations, and uncertainty regarding completion timelines. Similarly, students involved in organizational activities must negotiate competing priorities between academic obligations and extracurricular commitments. Those who possess effective stress-management skills are more likely to establish realistic priorities, regulate emotional responses, and maintain consistent academic engagement. Conversely, students who lack these skills may experience avoidance behaviors, procrastination, reduced concentration, and declining academic commitment.

The practical implication is that universities should treat stress management as a fundamental component of academic development rather than merely a personal issue faced by individual students (Pandya & Lodha, 2022; Akhtar & Akhtar, 2024; Romas & Sharma, 2025). Student support systems should incorporate psychological skills training, academic counseling, stress-awareness programs, and coping strategy development. Such initiatives should not only address students who are already experiencing severe stress but should function as preventive interventions that equip students with adaptive skills before academic pressures become overwhelming. Strengthening students' stress-management capacity is therefore an investment in improving sustainable academic productivity.

The Influence of Social Support on Student Productivity among FEBI UINSU Students

Social support emerges as a fundamental determinant of student productivity because academic success is not achieved through individual effort alone. Higher education often emphasizes personal responsibility and independence; however, this study reinforces the argument that students remain embedded within social systems that significantly shape their academic behaviors, motivation, and resilience. Support from family, peers, lecturers, and academic institutions provides students with emotional stability, practical assistance, and access to information that enables them to navigate academic challenges more effectively.

The importance of social support can be understood through Cohen and Wills' Social Support Buffering Hypothesis, which proposes that supportive relationships reduce the negative consequences of stress by strengthening individuals' coping resources (Cohen & Wills, 1985). In the academic context, social support functions not only as protection against psychological strain but also as a resource that encourages persistence and engagement. Students who receive encouragement, constructive feedback, and practical assistance are more likely to maintain confidence, remain motivated, and continue pursuing academic goals even when facing difficulties.

The findings align with Wilks (2008), who demonstrated that social support contributes to stronger academic motivation and resilience among university students. They are also consistent with Alsubaie et al. (2019), who found that social support positively influences students' psychological well-being and academic functioning. However, the contribution of this study lies in emphasizing social support as a productivity-enhancing mechanism rather than simply a factor associated with emotional adjustment. Productivity requires sustained effort over time, and social support provides the relational resources necessary for students to maintain that effort.

The role of social support is particularly evident in the FEBI UINSU context, where students frequently depend on interpersonal networks to overcome academic challenges. Peer relationships, for example, provide opportunities for collaborative learning, knowledge exchange, and problem-solving. Study groups and peer discussions can reduce academic barriers by allowing students to share strategies, clarify difficult concepts, and obtain encouragement during demanding periods. Likewise, lecturer support plays an important

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academic function by providing direction, feedback, and reassurance, particularly for students completing research projects or final academic requirements.

Family support also remains an important element because students' academic experiences are influenced by their broader social environment. Emotional encouragement, understanding of academic responsibilities, and practical support from family members can strengthen students' ability to remain focused and committed. When students perceive that their academic efforts are valued and supported, they are more likely to develop confidence and persistence in achieving academic objectives.

The dominance of social support within this research model carries an important implication for higher education management. Improving student productivity cannot rely exclusively on individual-based interventions that focus on study skills or personal discipline. Universities must also cultivate supportive academic ecosystems through stronger lecturer-student relationships, peer mentoring systems, academic communities, and accessible student support services. Productivity should therefore be understood as a socially embedded outcome, where individual capability interacts continuously with the quality of the surrounding environment.

The Combined Influence of Learning Strategy, Stress Management, and Social Support on Student Productivity among FEBI UINSU Students

The simultaneous influence of learning strategy, stress management, and social support demonstrates that student productivity represents a multidimensional phenomenon shaped by the interaction between cognitive, psychological, and social resources. This finding challenges the tendency to explain academic productivity through single factor approaches that focus only on individual ability or learning behavior. Instead, productivity emerges from the alignment between students' capacity to manage their learning processes, regulate psychological demands, and utilize supportive relationships available within their environment.

This integrated perspective corresponds with Robbins and Coulter's view of productivity as the outcome of effective resource management to achieve predetermined goals. In the context of higher education, students manage multiple forms of resources, including cognitive resources through learning strategies, emotional resources through stress management, and social resources through supportive networks. Productivity is achieved when these resources operate collectively rather than independently. A student may possess excellent learning techniques, but without emotional stability and adequate support, these strategies may not be effectively sustained. Likewise, strong social support may encourage motivation, but productivity still requires students' personal capacity to organize and execute academic activities. The findings suggest that interventions aimed at improving student productivity should adopt a holistic approach. Universities should not conceptualize academic success solely as the responsibility of students' individual effort. Instead, institutions play a crucial role in designing environments that facilitate effective learning behaviors, strengthen psychological resilience, and encourage meaningful social connections. Academic advising, mentoring programs, psychological services, and peer-support initiatives should operate as interconnected systems rather than separate services.

For FEBI UINSU students, this integrated approach is particularly important because academic productivity is influenced by the complexity of modern university life. Students must navigate academic requirements while simultaneously managing personal aspirations, social expectations, technological distractions, and future career concerns. Therefore, improving productivity requires more than teaching students how to study effectively; it requires

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developing students who can regulate themselves, cope with pressure, and engage with supportive academic communities.

Conclusion

Based on the research findings, it can be concluded that learning strategies do not yet show a significant influence on student productivity; thus, they are not the primary determinant of academic productivity during study. These findings indicate that merely applying learning strategies is insufficient to achieve optimal productivity without being balanced by students' psychological readiness and adequate environmental support. Conversely, stress management and social support were found to positively influence student productivity, indicating that a student's ability to manage academic pressure and the presence of social support from their surroundings are crucial factors in fostering the effectiveness and sustainability of academic activities. Simultaneously, learning strategies, stress management, and social support influence student productivity, demonstrating that such productivity results from the interaction of academic, psychological, and social factors. Therefore, efforts to enhance student productivity cannot focus solely on strengthening learning strategies but must also address stress management skills and the creation of a supportive social environment. These findings underscore the need for a comprehensive and integrated approach to sustainably improve student productivity within the higher education setting.

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