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The Use of Exploratory Factor Analysis (EFA) as an Analysis of Academic Stress Factors in College Students

Penggunaan Exploratory Factor Analysis (EFA) sebagai Analisis Faktor-faktor Stres Akademik Pada Mahasiswa

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Abstract

Academic stress is a psychological response to excessive demands in an educational environment that are difficult for individuals to meet. This study aims to identify and analyze the factors that contribute to academic stress among university students in Indonesia. Using a quantitative approach, this study involved 206 active university students selected through an incidental sampling technique. Data analysis utilized Exploratory Factor Analysis (EFA) with principal component factor reduction and varimax rotation methods. The results of the analysis revealed five main factors that shape academic stress in college students: (1) relationship factors, (2) fatigue factors, (3) adjustment factors, (4) conflict factors, and (5) economic factors. The findings provide a comprehensive insight into the sources of academic stress, which can be the basis for the development of effective intervention strategies to improve students' psychological well-being in the context of higher education in Indonesia.

Keywords: academic stress, Indonesian students, Exploratory Factor Analysis (EFA), academic stress factors

Abstrak

Stres akademik merupakan respons psikologis terhadap tuntutan berlebihan dalam lingkungan pendidikan yang sulit dipenuhi oleh individu. Penelitian ini bertujuan mengidentifikasi dan menganalisis faktor-faktor yang berkontribusi terhadap stres akademik pada mahasiswa di Indonesia. Menggunakan pendekatan kuantitatif, studi ini melibatkan 206 mahasiswa aktif yang dipilih melalui teknik *sampling insidental.* Pengumpulan data dilakukan melalui kuesioner daring dengan skala *Likert* lima poin. Analisis data menggunakan *Exploratory Factor Analysis* (EFA) dengan metode reduksi faktor *principal component* dan rotasi *varimax*. Hasil analisis mengungkapkan lima faktor utama yang membentuk stres akademik pada mahasiswa: (1) faktor hubungan dengan orang lain, (2) faktor kelelahan, (3) faktor penyesuaian diri, (4) faktor konflik, serta (5) faktor ekonomi. Temuan ini memberikan wawasan komprehensif tentang sumber-sumber stres akademik, yang dapat menjadi dasar bagi pengembangan strategi intervensi yang efektif untuk meningkatkan kesejahteraan psikologis mahasiswa dalam konteks pendidikan tinggi di Indonesia.

Kata Kunci: stres akademik, mahasiswa Indonesia, *Eksploratory Factor Analysis (*EFA), faktor stress akademik

1. Introduction

College students have a high level of sensitivity to stress (Yusuf & Yusuf, 2020). Stress itself can be defined as an individual's response to stressors, which can be situations and conditions that are believed to interfere with and limit an individual's ability to adapt (Hamidah et al., 2021). (Hamidah et al., 2021). According to Nusran (in Mardiani et al., 2022), stress is an internal condition that arises due to physical pressure, environmental factors, and social interactions that have a negative impact. Stress that is often felt by students in the context of education is known as academic stress (Oktavia et al., 2019). (Oktavia et al., 2019); (Chandra, 2021); (Tibus et al., 2021). Students experience academic stress as a result of the various challenges faced during the lecture period. (Sari et al., 2022).

Academic stress is a condition that arises when a person faces a situation where they feel too many demands that cannot be met, such as anxiety about exams and coursework, which results in difficulty in efficiently organizing a schedule to complete their academic obligations. (Busari, 2014); (Munir et al., 2015); (Poonam & Dixit, 2019). Not only that, another impact of *academic stressors* is psychological pressure that arises because of its relationship with the retention of one's knowledge and education. (Fatimah, 2020); (Kurniawan & Setiowati, 2022). *Academic stressors* are related to pressures that arise in the learning process, which include things such as requirements to advance to the next level, large assignment loads, cheating practices, exam grading, bureaucratic obstacles, decision-making about majors and careers, exam worries, and time management. (Rahmawati, 2016).

Academic stress has varied potential consequences, both positive and negative. At manageable levels, academic stress has the potential to produce beneficial effects such as increased inventiveness and personal development. (Yusuf & Yusuf, 2020). On the other hand, when it exceeds the limits of tolerance, it can adversely affect an individual's physical and psychological well-being. Such negative manifestations can include a variety of symptoms, including fatigue, sleep disturbances, headaches, neck muscle tension, changes in diet, the tendency to abuse alcohol, and decreased cognitive functions such as decreased memory and concentration. Furthermore, excessive academic stress can also inhibit problem-solving skills and potentially reduce academic achievement (Yusuf & Yusuf, 2020). (Yusuf & Yusuf, 2020; Azmiyyah & Lianawati, 2021).. Academic stress is influenced by various internal factors, including self-efficacy, hardiness, optimism, drive for achievement, procrastination, and external factors such as social support (Oktavia et al., 2019). (Oktavia et al., 2019); (Yusuf & Yusuf, 2020).

According to research conducted by Reddy et al. based on a *German Student Union* survey, students face delays in the learning process and tend to drop out of college due to the stress they experience. According to Busari (2014), stress has several aspects, including:

a Cognitive aspects involve stressful conditions that trigger intrusive thoughts, often characterized by decreased concentration and memory.

b The affective aspect is the individual's emotional response to stress, which can lead to uncomfortable feelings, such as increased emotionality, sadness, anger, and loss of emotional control.

c Behavioral aspects, which include changes in behavior in response to stress. For example, a normally sociable individual may become more withdrawn and a previously honest individual may lie frequently.

d Physiological aspects, which involve physical reactions to stress such as headaches, chest pain,

indigestion and shortness of breath.

Based on this exposure, the purpose of this study is to analyze the factors of academic stress in college students.

2. *Literature Review*

2.1 Academic Stress

Stress is an unpleasant emotional experience that can result in changes at the biochemical, physiological, and cognitive levels, as well as individual behavioural patterns. (Ussher et al., 2019).. In the scope of education, academic stress can be understood as a depressed condition that arises due to a person's view of the academic demands he faces. (Harahap et al., 2020). This condition can trigger negative reactions that affect the physical, behavioural, cognitive, and emotional aspects of the individual (Harahap et al., 2020). (Harahap et al., 2020). This phenomenon generally occurs due to pressures related to the learning process (Nurhayati, 2016). (Nurhayati, 2016). Students often experience academic stress, which can stem from various factors, such as heavy study loads, high-performance expectations, and time constraints. This condition is a common problem among university students and has a negative impact on their quality of life and academic performance. (Al-Marwaziyyah & Chori, 2022)..

According to Regehr et al. (2013), Academic stress is part of the process of student self-development, which includes adaptation to new environments, adjustment of roles and responsibilities, differences in learning loads and concepts compared to previous education levels, high academic demands, financial management, time management, expectations and challenges of academic achievement, lifestyle adjustments, and self-concept development. Therefore, academic stress can be considered a natural phenomenon. Physical symptoms that may appear include chest pain, indigestion, headache, nausea, difficulty sleeping, fatigue, and increased heart rate. Meanwhile, psychological reactions can include tension, irritability, irritability, memory impairment, depression, decreased motivation, difficulty completing tasks, and excessive responses to trivial matters. (Nasir & Muhith, 2011).

Stress does not always have a negative impact on students because, in some cases, it can act as a driver for students to increase their effort and achieve better academic performance, especially in situations that have significant consequences or strong pressure. Research addressing the relationship between stress, academic performance, and life satisfaction reveals that stress has the potential to positively influence academic performance, especially among highly motivated students (Samaha & Hawi, 2016). (Samaha & Hawi, 2016).

On the other hand, chronic and excessive stress can negatively impact academic performance. High levels of stress can lead to burnout, decreased motivation, and decreased cognitive functioning, ultimately impacting academic performance. For example, a study on the impact of academic stress, burnout, and resilience on students' achievement motivation found that high levels of stress directly and significantly influenced burnout and negatively impacted achievement motivation. (Pusvitasari et al., 2023)..

In addition, stress can also affect students' mental health and overall well-being. Research has shown that stress can contribute to psychological distress, which can negatively impact academic performance and overall quality of life. For example, a study on the relationship between psychological stress, academic adjustment, and emotional adjustment among undergraduate students found that

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psychological stress was positively correlated with academic adjustment and emotional adjustment. (Dalyop, 2022).

In the context of international students, acculturative stress can be particularly significant. A study on Chinese international students in the United States found that acculturative stress negatively impacted all quality of life domains, regardless of academic grades (Su et al., 2021). This highlights the need for support systems and resources to help international students overcome acculturation challenges and maintain their mental health and academic performance.

It can be concluded that stress has the potential to have varied effects on academic performance, both beneficial and detrimental. However, it is important to emphasize the importance of being aware of the negative consequences that prolonged stress may have on mental health and overall quality of life. Providing support systems and resources to help students manage stress and maintain a healthy work-life balance is essential to promoting academic success and overall well-being.

2.2 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA), also known by the acronym EFA, is a statistical analysis technique applied to detect and reveal the structure and interrelationships among various variables in a particular data set. (Courtney, 2013). This method serves as a tool to explore patterns that may not be directly visible among the variables under study. EFA is a form of factor analysis that serves to simplify the dimensions of a large set of variables by classifying them into a smaller set of underlying factors. A unique characteristic of this method is that the factors are not predetermined but emerge naturally from the data being analyzed. This process often involves a series of iterative steps that include factor extraction and Rotation (Courtney, 2013). (Courtney, 2013).

In EFA, variables are analyzed for correlations and patterns, and factors are identified based on the strength of correlations between variables and factors. The factors are then rotated to optimize their interpretability and to minimize the number of factors needed to explain the data. (Goretzko, 2023). The EFA process involves several steps:

a. Data Preparation: Data was cleaned and prepared for analysis by checking for missing values, outliers, and normality of variables.

b. Factor Extraction: The data is then analyzed to determine the number of factors that best explain the data. This is done using various techniques such as *principal component analysis (PCA), principal axis factoring (PAF),* or *maximum likelihood estimation* (MLE).

c. Factor Rotation: The factors are then rotated to improve their interpretability. This involves adjusting the orientation of the factors to better align with the underlying data structure.

d. Factor Interpretation: The factors were then interpreted based on the variables that loaded the most in each factor. This helps to identify the underlying constructs or themes represented by each factor.

EFA is used extensively in fields such as psychology, education, and business to identify factors underlying behaviour, attitudes, and performance. It is particularly useful when there is no prior knowledge of the underlying structure of the data or when the variables are highly correlated with each other(Luo et al., 2019).

In the context of the given search results, EFA was used to develop a scale to measure statistical anxiety in education, to validate a questionnaire subscale for severe asthma, and to analyze the construct of Adversity Quotient (AQ) among young people. These studies demonstrate the versatility of EFA in various research domains and its ability to provide insights into complex phenomena by identifying factors underlying behaviours and attitudes(Lanario et al., 2020; Mohd Matore et al., 2019; Putri, 2021).

3. Research Methods

This research uses a quantitative approach, and the research subjects are Indonesian students who are still studying. *Incidental* sampling is also known as *non-probability* sampling, with a sampling method in which everyone who interacts by chance with the researcher can be included in the research sample if they are considered to be able to provide data (Sugiyono, 2018). (Sugiyono, 2018). This study involved 206 respondents, consisting of 76 males and 130 females, who are active university students in Indonesia aged between 18 and 23 years.

The data collection instrument consisted of two components, namely biography, which included gender, age, and major, and 30 academic stress factors, which were measured using a five-point Likert scale model for each statement. On a 5-point Likert rating scale, respondents' responses ranged from 1 indicating "Strongly Agree" to 5 indicating "Strongly Disagree". Data collection was conducted through an online questionnaire using Google Forms. The data analysis process was carried out using the *exploratory factor analysis* (EFA) method with factor reduction techniques using *principal component analysis* and varimax Rotation. Data were analyzed using IBM SPSS Statistic software version 21. Exploratory factor analysis begins with the KMO Test and Bartlett Test. If the KMO MSA value exceeds 0.05 and *Bartlett's Test of Sphericity* is less than 0.05, the factor analysis technique can proceed.

4. Results and Discussion

4.1. Research Results

The data obtained from distributing questionnaires through g-form is then analyzed to determine the factors that make up academic stress using the EFA test. The initial stage of the KMO Test and Bartlett Test aims to determine whether the data can be processed further using factor analysis. This can be done by observing the KMO MSA value. If the KMO MSA value exceeds 0.05 and *Bartlett's Test of Sphericity* is less than 0.05, the factor analysis technique can be continued.

Table 1. KMO and Barlett's First Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	1632.067
	df	435
	Sig	.000

Based on the table above, it can be seen that the KMO MSA value (0.850) is greater than 0.05, and Bartlett's Test of Sphericity value (0.00) is less than 0.05, so factor analysis can be continued.

Table 2. First Total Explained Variance

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Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.166	20.552	20.552	6.166	20.552	20.552	3.270	10.899	10.899
2	2.617	8.724	29.276	2.617	8.724	29.276	2.872	9.572	20.471
3	1.653	5.510	34.786	1.653	5.510	34.786	2.111	7.036	27.508
4	1.485	4.950	39.737	1.485	4.950	39.737	2.065	6.882	34.389
5	1.431	4.771	44.508	1.431	4.771	44.508	1.911	6.370	40.759
6	1.328	4.425	48.933	1.328	4.425	48.933	1.598	5.325	46.085
7	1.213	4.044	52.977	1.213	4.044	52.977	1.585	5.283	51.368
8	1.040	3.468	56.445	1.040	3.468	56.445	1.523	5.077	56.445
9	.986	3.285	59.731						
10	.936	3.119	62.849						
11	.853	2.843	65.693						
12	.819	2.732	68.424						
13	.808	2.693	71.117						
14	.764	2.545	73.662						
15	.753	2.510	76.173						
16	.688	2.294	78.466						
17	.667	2.222	80.689						
18	.628	2.093	82.782						
19	.599	1.996	84.778						
20	.577	1.924	86.702						
21	.522	1.740	88.442						
22	.502	1.672	90.114						
23	.491	1.636	91.750						
24	.454	1.514	93.264						
25	.407	1.358	94.622						
26	.388	1.293	95.915						
27	.347	1.155	97.071						
28	.339	1.130	98.201						
29	.276	.920	99.120						
30	.264	.880	100.000						

Extraction Method: Principal Component Analysis.

The Total Variance Explained table presents the values for each variable evaluated. This analysis includes 30 variables, so 30 components were studied. Based on the initial *eigenvalues* table, 8 factors were formed from the 30 components. A component can form a factor if *its eigenvalues* exceed 1. In this study, the first component shows eigenvalues of 6.166, which exceeds the threshold of 1, thus forming factor 1 that can explain 20.552% of the variation. The second component has eigenvalues of 2.617, also above the threshold of 1, forming factor 2 that explains 8.724% of the variation. Furthermore, the third component with *eigenvalues of* 1.653 forms factor 3, explaining 5.510% of the variation. The fourth component (*eigenvalues* 1.485) forms factor 4, explaining 4.950% of the variation. The fifth component (*eigenvalues* 1.431) forms factor 5, explaining 4.771% of the variation. The sixth component, with *eigenvalues of* 1.328 and above 1, forms factor 6, explaining 4.425% of the variation. Component 7, with *eigenvalues* of 1.213, also greater than 1, forms factor 7, which explains 4.044% of the variation. Component 8, with *eigenvalues of* 1.040, is greater than 1, so it forms factor 8 and can explain 3.468% of the variation. If

factors 1 to 8 are summed up, they can explain 56.445% of the total variation. The total value of components 9, 10, 11 and so on are not calculated because they do not meet the criteria to form a factor.

Table 3. First Rotated Component Matrix

Rotated Component Matrix								
	Component							
	1	2	3	4	5	6	7	8
X2	.735							
X1	.689							
X16	.620							
X4	.584				.322			
X3	.532			.316				
X17	.423	.382						
X24		.753						.334
X25		.682						
X22		.658						
X23		.629						
X19		.582						
X26			.747					
X27	.308		.569		.335			
X29	.423		.505			.358		
X30	.465		.468					
X15	.444		.450					
X7				.714				
X8				.702				
X6				.613				
X20					.717			
X21					.597			
X5			.321		.458			
X18						.703		
X14						.568		.324
X28					.331	.524	.318	
X9							.750	
X10							.465	
X13			.339	.331			-.363	
X12	.722							
X11	.620							
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.								
a. Rotation converged in 13 iterations.								

The rotated Component Matrix table above shows the grouping of categories that belong to each new factor formed. The rotation results show that components X1, X2, X3, X4, X16, X17 cluster on factor 1. Components X19, X22, X23, X24, X25 cluster on factor 2. components X13, X15, X26, X27, X29, X30 cluster on factor 3. Components X7, X8, and X6 cluster on factor 4. Components X5, X20, and X21 cluster

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on factor 5. Components X14, X18, and X28 cluster on factor 6. Components X9 and X10 cluster on factor 7. Components X11 and X12 cluster on factor 8. Then, the researchers analyzed 8 factors formed from 30 components. Researchers aborted factor 5 with components X5, X20, and X21 because they did not form the same factor.

Researchers dropped Factor 7 with components X9 and X10 because they did not form the same factor. Researchers dropped factor 6 with components X14, X18, and X28 because they did not form the same factor. Researchers dropped component X17 from factor 1 because it did not form the same factor. Researchers dropped component X13 from factor 3 because it did not form the same factor. Researchers eliminated the X8 component from factor 4 because it did not form the same factor. After eliminating these components, the EFA test was carried out again.

Table 4. Second Total Explained Variance

Second KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.812
Bartlett's Test of Sphericity	Approx. Chi-Square	982.495
	df	171
	Sig	.000

The KMO and Bartlett Test results table above explains the KMO MSA value (0.812) is greater than 0.05 and the Bartlett Test value (0.00) is less than 0.05. With this, data analysis can be continued

Table 5. Second Total Explained Variance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.758	25.042	25.042	4.758	25.042	25.042	2.704	14.233	14.233
2	2.096	11.031	36.072	2.096	11.031	36.072	2.612	13.750	27.982
3	1.500	7.896	43.968	1.500	7.896	43.968	2.431	12.794	40.776
4	1.335	7.025	50.993	1.335	7.025	50.993	1.527	8.038	48.814
5	1.042	5.483	56.476	1.042	5.483	56.476	1.456	7.662	56.476
6	.876	4.609	61.085						
7	.837	4.403	65.488						
8	.759	3.997	69.485						
9	.749	3.940	73.425						
10	.700	3.682	77.107						
11	.651	3.426	80.533						
12	.617	3.249	83.782						
13	.567	2.982	86.764						
14	.516	2.714	89.478						
15	.481	2.534	92.011						
16	.414	2.178	94.189						
17	.406	2.135	96.324						
18	.376	1.980	98.304						
19	.322	1.696	100.000						

Extraction Method: Principal Component Analysis.

This second analysis involved 19 variables, resulting in 19 evaluated components. Based on the table presented, 5 main factors were identified from the total of 19 components. Component 1 showed eigenvalues of 4,758, which significantly surpassed the threshold of 1. Consequently, this component formed factor 1, which explained 25.042% of the total variation. Component 2, with eigenvalues of 2.096, also surpasses the threshold of 1, thus forming factor 2. This factor contributes to explaining 11.031% of the overall variation. Furthermore, component 3 has eigenvalues of 1,500, which also exceeds the threshold of 1, thus forming factor 3. This factor explains 5.483% of the total variation. The accumulation of the five identified factors explains 56.476% of the total variation in the data. Components 6, 7, 8 and so on were not considered in factor formation as their eigenvalues did not meet the minimum criteria set, which is greater than 1.

Table 6. Rotated Component Matrix Second Rotated Component Matrix

	Component				
	1	2	3	4	5
X2	.742				
X4	.680				
X1	.673				
X16	.548				
X3	.524			.320	
X24		.790			.333
X25		.715			
X23		.644			
X22		.630			
X19		.604			
X26			.697		.391
X27			.693		
X29			.672		
X15	.366		.636		
X30	.423		.495		
X7				.802	
X6				.693	
X12					.789
X11					.603

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Based on the table, *the Rotated Component Matrix* above shows the grouping of categories that belong to each new factor formed. The rotation results show that factor 1 consists of components X1, X2, X3, X4, and X16, which are categorized as factors of relationships with others. Factor 2 consists of components X19, X22, X23, X24, and X25, which are identified as fatigue factors. Factor 3 consists of components X27, X29, X15, and X30, which are categorized as adjustment factors. Factor 4 consists of components X6 and X7, which are classified as conflict factors. Factor 5 consists of components X11, X12, and X26, which are identified as economist factors i. This grouping allows

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for a more meaningful interpretation of the underlying structure of the data, with each factor representing a different but related aspect of the research context.

4.2. Discussion

4.2.1. Relationship factors with others

From the results of the analysis, it is found that relationships with other people affect the academic stress experienced by students. Relationships with others are in the form of friends staying away, problems with roommates, working in groups and problems with lovers. According to Rahman (in A et al., 2018)According to Rahman (in A et al., 2018), social interaction relationships with other people, be it college friends or individuals outside the lecture environment, significantly affect students' conditions.

Research conducted by Purnawati and Rahmandani (2018) showed a negative relationship between the level of peer attachment and the level of academic stress in students at Diponegoro University.) showed a negative relationship between the level of peer attachment and the level of academic stress in students at Diponegoro University. In line with this, Faqih's research (2020) found a negative relationship between peer social support and academic stress levels. These results indicate that low social support from peers is associated with high levels of academic stress in students and vice versa.

4.2.2. Fatigue Factor

From the results of the analysis, it is found that fatigue factors shape the academic stress experienced by students. The fatigue is in the form of long lecture hours and too many assignments and exams, so students stay up late and lack time to rest. The impact of the accumulation of coursework and the tight schedule of classes can result in fatigue in students, which in turn can trigger symptoms such as headaches and irritability. (Hamzah et al., 2020). Academic stress is understood as an individual response to the pressure and burden of tasks that must be completed by students. (Barseli et al., 2020).. Studies conducted by Galambos et al. (2013) found that irregular sleep patterns and lack of sleep due to excessive academic demands have a significant negative impact on students' mental well-being, such as increased symptoms of depression and anxiety over time.

4.2.3. Adjustment Factors

From the results of the analysis, it is found that self-adjustment factors shape the academic stress experienced by students. This self-adjustment factor is in the form of difficulties interacting with classmates, living environment, lecture environment and studying in a new city. Students will face difficulties in the lecture process if they have difficulty adapting and getting along with the surrounding environment. (Agustin et al., 2018). Research conducted by Maulana and Sari (2018)showed a substantial negative relationship between self-adjustment to academic demands and stress levels in new students. This study shows that the stronger students' ability to adjust to academic challenges, the less stress they face. Furthermore, research conducted by Credé & Niehorster (2012)showed that students' adjustment to university life has a considerable impact on their academic progress and well-being. This study underscores the importance of adjustment skills in various aspects, including academic, social, personal-emotional, and institutional attachment, all of which play a role in reducing academic stress. These findings confirm the importance of effective orientation and support programs for new students to facilitate their adjustment process.

4.2.4. Conflict Factors

Conflict factors shape the academic stress that occurs in students. This conflict factor is in the form of problems with family and misunderstandings with friends. According to Azizah Satwika (2021)According to Azizah & Satwika (2021), students working on a thesis experience academic stress caused by conflict factors with parents, lecturers and friends. These conflicts can create tension, discomfort, and difficulties in communicating or interacting with related parties, which has the potential to cause students to feel depressed and stressed in carrying out their academic tasks. Furthermore, Rusmianingsih et al. (2024) found a relationship between academic stress levels and sleep quality in nursing students who experienced conflict. This finding is consistent with research by Frazier et al. (2018), who found that interpersonal conflict, especially with family and classmates, is one of the factors that contribute to students' academic stress. According to this study, students who have conflicts in their personal relationships are more likely to feel academic stress, which can have a negative impact on their academic performance. Research conducted by Bedewy and Gabriel (2015) supports these findings by identifying interpersonal conflict as one of the four main factors affecting students' perceived academic stress. They found that misunderstandings with friends and family problems can disrupt students' concentration, reduce motivation to study, and increase anxiety related to academic tasks. These studies emphasize the importance of understanding students' interpersonal relationship dynamics and their role in shaping their academic stress experience.

4.2.5. Economic Factors

Economic factors have been identified as a significant contributor to academic stress among students. This economic problem often makes it difficult for students to equip themselves with adequate lecture facilities, such as laptops and computers and often requires them to work part-time. This finding is in line with research by Misra and Castillo (2004), who revealed that financial difficulties are one of the main sources of academic stress. Furthermore, Bedewy and Gabriel (2015) found that financial pressures, including the cost of education and living needs, contribute significantly to students' academic stress levels. This is in line with research by Adha et al. (2020), who found that financial circumstances such as tuition fees, buying books, and class fees were the dominant academic stressors.

Research conducted by Heckman et al. (2014) revealed that students who work part-time to fulfil their financial needs tend to experience higher levels of academic stress compared to students who do not work. This finding is reinforced by recent research by Pascoe et al. (2020), which confirmed financial hardship as one of the significant predictors of academic stress among university students. Some of these research results consistently show that economic factors play an important role in the formation of academic stress in college students, emphasizing the importance of attention to financial aspects in an effort to manage academic stress in a higher education environment.

5. Conclusion

The analysis identified five main factors contributing to academic stress among university students, namely relationship factors, fatigue factors, adjustment factors, conflict factors, and economic factors. For future researchers, it is recommended to expand the scope of the study by exploring effective interventions for dealing with academic stress. In addition, investigation into additional factors that may play a role in academic stress is also recommended. Thus, research can make a more in-depth and relevant contribution to understanding and addressing academic stress in university students.

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