Factors affecting students' learning outcomes at the Faculty of Economics and Business Administration, An Giang University

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Abstract:

The knowledge economy stands as one of the development strategies pursued by every nation. Constructing a knowledge-based economy hinges on four pillars: the environment, the education system, the information infrastructure, and the innovation system. Consequently, education plays an integral role, particularly at the university level. To evaluate the educational process at universities, the academic achievements of students are consistently considered. Currently, across universities in general and An Giang University in particular, there is an escalating number of students experiencing poor academic performance, which leads to academic indebtedness, re-examinations, and delayed graduation. Hence, there is an imperative need to investigate the factors influencing students' learning outcomes within the Faculty of Economics and Business Administration at An Giang University. The primary objective of this study is to identify the factors that impact students' learning outcomes and propose measures for enhancing these outcomes. The research encompasses two phases: qualitative research and quantitative research. Following the survey and data cleansing procedures, the sample size for analysis comprises 350 observations. The analysis outcomes reveal that four variables exhibit a positive correlation with students' learning outcomes: family and societal factors, scholarships, infrastructure, and motivation. The results of this research are intended to serve as practical documents that can assist academic leaders in making informed decisions to enhance the quality of education within the faculty.

Keywords: **An Giang University, family and society, infrastructure, learning outcome, motivation, scholarship.**

Classification numbers: **3.3, 3.4**

1. Introduction

In recent years, a knowledge-based economy has emerged as the prevailing development strategy in both developed and developing nations, including Vietnam. A knowledge-based economy, also referred to as a knowledge-driven economy, is characterised by its heavy reliance on knowledge, scientific advancements, and high-tech innovations. This economic paradigm places a growing emphasis on the production, dissemination, and utilisation of knowledge and information OECD (1996) [1]. It defines a knowledge economy as one in which knowledge's creation, dissemination, and utilisation are the principal catalysts for growth, wealth generation, and employment across all sectors of the economy APEC (2000) [2]. Building a knowledge-based economy hinges on four foundational pillars: the environment, the education system, the information infrastructure, and the innovation system. Among these pillars, education holds a pivotal role, particularly in higher education.

Universities represent the cherished aspiration of the majority of students, who are regarded as the future custodians of their nation. Higher education consequently garners considerable attention from the state, as it is viewed as one of the most indispensable and influential forms of education. The rationale behind this perspective is that young individuals undergoing higher education acquire enhanced skills, experiences, and a heightened level of knowledge that can be harnessed for their economic and social advancement. Universities frequently rely on the outcomes of student learning to gauge the effectiveness of their educational processes. As per N.D. Chinh (2009) [3], learning outcomes encompass the levels of knowledge, skills, and awareness that learners attain in a specific field or subject. Therefore, academic performance assumes a paramount role in shaping a student's employment prospects, opportunities for promotion, entrepreneurial potential, capacity for

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further learning, research during graduation, and professional correspondence. It, in essence, reflects the educational excellence of the institution where the student is enrolled.

Student learning outcomes are subject to a multitude of objective and subjective factors. Objective indicators comprise elements such as institutional facilities, part-time employment [4], social networks [5], living conditions, and more. Family circumstances [6], and the teaching styles of educators [7] also exert objective influences. Subjective determinants include learning attitudes, study methods [6], and students' cognitive capabilities [8].

Furthermore, at present, there is a discernible upward trend in the percentage of students with poor academic performance at universities in general and An Giang University in particular, with figures rising from 32.14 to 33.24% (Table 1). This predicament demands attention, and proactive measures must be adopted to assist students in achieving improved academic performance. In the present context, An Giang University holds membership within Vietnam National University, Ho Chi Minh City (VNU-HCM), reflecting its commitment to raising the calibre of education at the institution to accurately mirror its newfound position and role as an university member of VNU-HCM. To achieve the overarching objective of enhancing the quality of education, educational institutions and departments must endeavour to elevate student learning outcomes. Thus, it becomes imperative to explore strategies aimed at aiding students, particularly those within the Faculty of Economics and Business Administration, in enhancing their academic achievements - a subject that warrants careful consideration within the academic purview of An Giang University.

Table 1. Data on academic warnings and expulsions for 2019-2022.

Semester	Academic warning	Forced to quit school	Faculty of Economics - Business Administration		Ratio (%)	
			Academic warning	*Forced to quit school*	*Academic warning*	*Forced to quit school*
Semester 1, 2019-2020	140	194	45	53	32.14	27.32
Semester 2, 2020-2021	151	144	49	41	32.45	28.47
Semester 1, 2021-2022	692	69	230	13	33.24	18.84

Source: Compiled from An Giang University's notice of academic processing review.

Therefore, with the increasing number of academic warnings within the Faculty of Economics and Business Administration at An Giang University, there is a pressing need to investigate the factors influencing the learning outcomes of students in this faculty. This study aims to identify the factors affecting the learning outcomes of students in Economics and Business Administration in the evolving context of An Giang University's affiliation with VNU-HCM.

Research objective: The research seeks to explore the factors that impact the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University.

Research questions:

1. What factors influence the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University?

2. To what extent do these factors affect the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University?

3. What recommendations can be provided to enhance the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University?

2. Theoretical background

2.1. Learning outcomes

The concept of learning outcomes, often referred to as academic outcomes or learning achievements, is well-established, yet various studies offer different interpretations.

Learning outcomes have consistently been intertwined with educational activities and have been a subject of extensive research. N.E. Gronlund (1985) [9], in his work "Measurement and Evaluation in Education," defines learning outcomes as follows: "The purpose of education is student progress. It is the result of learning that changes student behaviour." This definition underscores that learning outcomes manifest changes in learners' behaviour following the entire learning process.

K. Kraiger, et al. (1993) [10] elaborate that learning outcomes encompass language proficiency, knowledge structuring, and cognitive planning.

S. Adam (2006) [11] characterises learning outcomes as what learners aim to comprehend, know, and demonstrate after their educational experience. It is also defined as the amalgamation of knowledge, skills, and attitudes acquired through a specific

learning journey. Upon entering a university, students often anticipate the institution's teaching quality, a conducive learning environment, and a highly qualified faculty that can impart their expertise. They expect this to translate into commendable academic results and enhanced employment prospects.

In the words of N.D. Chinh (2009) [3], "A learning outcome is the level of knowledge, skill, or awareness that a learner achieves in a particular field (subject)". Hence, learning outcomes represent the accumulation of knowledge attained by learners.

From the definitions provided above, it becomes evident that primary learning outcomes generally signify the extent to which learners accumulate and apply knowledge during their educational journey. Simultaneously, learning outcomes also reflect alterations in learners' perceptions, attitudes, and behaviours as a consequence of active learning. In this study, the authors adopt the concept of learning outcomes as articulated by S. Adam (2006) [11].

2.2. Evaluation of learning outcomes

In 1956, B.S. Bloom, et al. (1956) [12] authored the seminal work "A Taxonomy of Educational Objectives," wherein he delineated six levels of cognitive processes: Remember, Understand, Apply, Analyse, Evaluate, and Create. Benjamin Bloom's taxonomy categorises cognitive engagement from elementary to advanced, with each level corresponding to a distinct cognitive competence. Consequently, students can gauge their own level of knowledge or learning accomplishment by referencing Bloom's six levels.

Moreover, as per Hamer's perspective, learning outcomes are appraised through course outcomes as indicated by L.D. Hai (2016) [13]. According to T.T.T. Oanh, et al. (2006) [14], the assessment of learning outcomes involves the systematic gathering and analysis of information acquired during the pursuit of learning objectives. This process furnishes a foundation for educators and learners to make informed decisions geared towards enhancing learning outcomes. Assessment outcomes are expressed using predetermined scales, such as daily learning assessments, mid-term examinations, and final exams.

The authors contend that the assessment of learning outcomes constitutes a composite process encompassing both student self-assessment and teacher-mediated assessment using predefined scales. Its fundamental purpose is to assist learners in reviewing the knowledge they have acquired, facilitating the timely supplementation of any missing knowledge, and furnishing educators with the requisite insights to tailor their instructional strategies for the improvement of student learning outcomes. In the context of this study, the authors embrace the notion of evaluating learning outcomes in line with the frameworks of B. Bloom and T.T.T. Oanh.

3. Research model

Drawing upon a comprehensive review of prior research concerning factors influencing student learning outcomes and grounded in the theoretical underpinnings of prior research models, each study exhibits variables that align with variations in research domain, scope, objectives, and real-world conditions. In this particular investigation, the authors have analysed the factors impacting the learning outcomes of students within the Faculty of Economics and Business Administration at An Giang University (Fig. 1). These factors include: (1) Personal performance, (2) Enthusiasm for learning, (3) Learning motivation, (4) Learning method, (5) Teaching method, (6) Scholarship, (7) Infrastructure, (8) Management of the Faculty of Economics and Business Administration, (9) Peer influence, and (10) Family and societal influence (Table 2).

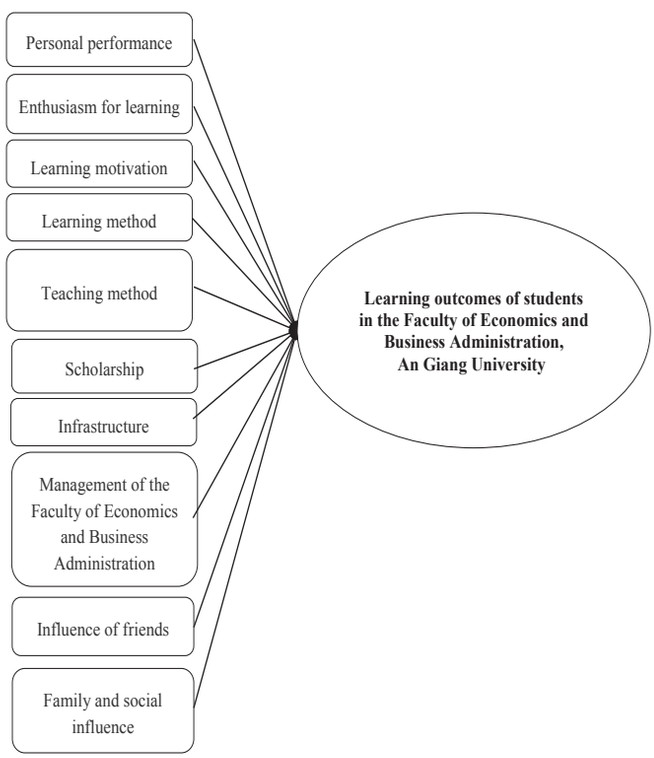

Fig. 1. Research model.

Table 2. Summary of theoretical results.

Numerical order	Factors	Authors
1	Personal performance	M.J. Kintu, et al. (2017) [15] N.S. Kirmani, et al. (2008) [16] M. Bratti, et al. (2013) [17] D. Checchi, et al. (2000) [18] M. Dickie (1999) [19]
2	Excited to learn	V.V. Viet, et al. (2017) [20]
3	Learning motivation	D.H. Hung, et al. (2020) [21] N.T.T. An, et al. (2016) [22]
4	Learning method	O. Usman, et al. (2022) [23], P.T.H. Thao, et al. (2020) [6]
5	Teaching method	P.T.H. Thao (2020) [6]
6	Infrastructure	P.T.H. Thao (2020) [6], V.V. Viet, et al. (2017) [20], M.J. Kintu, et al. (2017) [15]
7	Management of the Faculty of Economics - Business Administration	D.T.T. Huyen, et al. (2022) [24], N.S. Kirmani, et al. (2008) [16]
8	Influence of friends	O. Usman, et al. (2022) [23], V.V. Viet, et al. (2017) [20]
9	Family and social influence	O. Checchi, et al. (2000) [18] M. Dickie (1999) [19] V.V. Viet, et al. (2017) [20] O. Usman, et al. (2022) [23] N.H. Trang (2020) [25]
10	Scholarship	V.V. Viet, et al. (2017) [20]

Source: Authors' summary of research theory.

Research hypotheses:

Hypothesis H1: Personal performance has a positive linear relationship with student learning outcomes.

Hypothesis H2: Enthusiasm for learning has a positive linear relationship with student learning outcomes.

Hypothesis H3: Learning motivation has a positive linear relationship with student learning outcomes.

Hypothesis H4: The learning method has a positive linear relationship with student learning outcomes.

Hypothesis H5: The teaching method has a positive linear relationship with student learning outcomes.

Hypothesis H6: Scholarship has a positive linear relationship with student learning outcomes.

Hypothesis H7: Infrastructure has a positive linear relationship with student learning outcomes.

Hypothesis H8: Management of the Faculty of Economics and Business Administration has a positive linear relationship with student learning outcomes.

Hypothesis H9: Peer influence has a positive linear relationship with student learning outcomes.

Hypothesis H10: Family and societal influence have a positive linear relationship with student learning outcomes.

Based on the research review and theoretical framework on learning outcomes, the author summarizes the research scale in Table 3.

Table 3. Interpretation of observed variables in research models.

I. Personal performance (NLCN)			
NLCN 1	Your personality affects the learning process	Likert 1 - 5	T.T.T. Huyen, et al. (2021) [26]
NLCN 2	The ability to study affects academic performance	Likert 1 - 5	
NLCN 3	Self-affirmation of individual abilities improves learning outcomes	Likert 1 - 5	
NLCN 4	Do time management skills affect academic performance?	Likert 1 - 5	
II. Enthusiasm for learning (HT)			
HT1	Prepare for the lesson before going to the lesson	Likert 1 - 5	L.D. Tho (2019) [27]
HT2	Are you doing your homework?	Likert 1 - 5	
HT3	Actively test your knowledge	Likert 1 - 5	
HT4	You plan your studies well (group study, self-study)	Likert 1 - 5	
III. Learning motivation (DC)			
DC1	Do you spend a lot of time studying?	Likert 1 - 5	P.T.H. Thao, et al. (2020) [6], D.T.K. Oanh (2013) [28]
DC2	Investing in your studies is your top priority	Likert 1 - 5	
DC3	You have a high sense of self-study	Likert 1 - 5	
DC4	His/her learning motivation is high	Likert 1 - 5	
DC5	You are always ready to overcome difficulties to achieve good academic results	Likert 1 - 5	
IV. Learning method (PP)			
PP1	Do you often set learning goals?	Likert 1 - 5	P.T.H. Thao, et al. (2020) [6], O. Usman, et al. (2022) [23]
PP2	Do you know how to execute your plan effectively?	Likert 1 - 5	
PP3	Reading the material under the guidance of the instructor	Likert 1 - 5	
PP4	Taking good notes in your own way	Likert 1 - 5	
PP5	Summarise the main ideas of the lesson	Likert 1 - 5	
V. Teaching method (GD)			
GD1	Lecturer combined with reading for students	Likert 1 - 5	P.T.H. Thao, et al. (2020) [6]
GD2	Instructor provides learning materials to students	Likert 1 - 5	
GD3	Instructors use the latest teaching techniques (kabuto, virtual classrooms, etc.).	Likert 1 - 5	
GD4	The instructor answers students' questions about the subject	Likert 1 - 5	
GD5	Instructors regularly check students' knowledge	Likert 1 - 5	
VI. Scholarship (HB)			
HB1	Are you interested in scholarships?	Likert 1 - 5	V.V. Viet, et al. (2017) [20]
HB2	You set high goals for scholarships in your studies	Likert 1 - 5	
HB3	Scholarships help you be more committed to your studies	Likert 1 - 5	
HB4	The value of the scholarship will help you continue your studies	Likert 1 - 5	
VII. Infrastructure (VC)			
VC1	Good quality classrooms (tables, chairs, projectors, computers)	Likert 1 - 5	P.T.H. Thao, et al. (2020) [6]
VC2	Extensive library resources (books, newspapers, e-books)	Likert 1 - 5	
VC3	The Internet is great for learning	Likert 1 - 5	
VC4	Good electricity and water system	Likert 1 - 5	
VC5	Good environmental hygiene (campus, restrooms, classrooms)	Likert 1 - 5	
VIII. Management of the Faculty of Economics and Business Administration (QL)			
QL1	Learning and career counselling activities of the Faculty meet the needs of students	Likert 1 - 5	N.S. Kirmani, et al. (2008) [16], D.T. T. Huyen, et al. (2022) [24]
QL2	Announcements from the Faculty are quickly disseminated to students	Likert 1 - 5	
QL3	Information about the training program is disseminated promptly	Likert 1 - 5	
QL4	Quickly respond to students' difficulties in learning problems (certificates of computer science, foreign languages)	Likert 1 - 5	
IX. Influence of friends (BB)			
BB1	Encouragement from friends to help you study well	Likert 1 - 5	O. Usman, et al. (2022) [23], T. T.T. Huyen, et al. (2021) [26]
BB2	Competition in the classroom helps you study well	Likert 1 - 5	
BB3	Working together to solve problems in the learning process makes your learning results good	Likert 1 - 5	
BB4	Many friends with the same learning goals help you learn better	Likert 1 - 5	
X. Family and societal influence (FS)			
FS1	Family support improves learning outcomes	Likert 1 - 5	N.H. Trang (2020) [25]
FS2	Family care enhances academic performance	Likert 1 - 5	
FS3	The family's income is guaranteed for studying, working, and improving learning outcomes	Likert 1 - 5	
FS4	Family is the driving force for you to strive for good learning outcomes	Likert 1 - 5	
FS5	Participating in social activities in the school improves learning outcomes	Likert 1 - 5	
XI. Learning outcomes (KQ)			
KQ1	Learning results reflect your learning ability	Likert 1 - 5	P.T.H. Thao, et al. (2020) [6]
KQ2	A good study result helps to accurately ascertain academic performance.	Likert 1 - 5	
KQ3	Better academic performance makes it easier to find a job after graduation	Likert 1 - 5	
KQ4	Academic achievement is proportional to professional ability at work	Likert 1 - 5	

Source: Summary of research theory.

4. Research methodology

This study employs a combination of both qualitative and quantitative research methods, outlined as follows:

Qualitative research: The author utilises in-depth interviews, featuring open-ended questions, to elucidate the factors influencing the learning outcomes of students in the Faculty of Economics and Business Administration. This phase involves the use of paper questionnaires and interviews with the subject matter experts, including lecturers with expertise in the research domain, as well as academic advisors (n=10). Data derived from the qualitative research phase will serve as the foundation for constructing a questionnaire for the subsequent quantitative research.

Quantitative research: The official questionnaire has been refined based on the insights gleaned from the qualitative research phase. The authors collect data by administering questionnaires to students (n=350) enrolled in various fields and courses within the Faculty of Economics and Business Administration. Following data collection, a thorough check is conducted to identify any inappropriate or incomplete surveys. Subsequently, all satisfactory surveys are subjected to analysis using the SPSS software system. The primary objective is to examine theoretical models and hypotheses. Various statistical, comparative, and analytical techniques are employed to facilitate the analysis of the research sample data.

5. Results and discussion

5.1. Sample statistics

The study surveyed 350 students from the Faculty of Economics and Business Administration at An Giang University, revealing that 58.6% of the respondents were female, while 41.4% were male. In terms of majors, Accounting constituted 21.4%, followed by Finance - Banking and Business Administration at 20.6%, International Economics at 20.9%, and Marketing at 15.7%. Concerning the academic year, the senior class comprised 143 survey participants, accounting for 40.9%, while juniors and sophomores had 64 participants, amounting to 18.3%, representing the lowest percentage. These percentages were based on a total of 350 observations.

The study also noted that 77 (22%) of the students received scholarships, while approximately one-third, or 273 (78%), did not receive scholarships. Furthermore, regarding part-time employment, 129 students (36.86%) held part-time jobs, which is less than half of the 221 students (63.14%) who did not have part-time jobs. Additionally, the number of hours students spent on part-time jobs ranged from 4 hours per week to 100 hours per week, with the highest percentage at 8 hours per week, involving 22 students, or 6.3%. Overall, however, the surveyed students dedicated a significant portion of their time to part-time employment.

Furthermore, the study indicated that the number of hours students devoted to self-study ranged from 0.2 hours per day to 10 hours per day. The highest proportion of students allocated 2 hours per day, comprising 102 students, or 29.1% of the total sample size of 350.

Moreover, the study encompasses students with varying learning outcomes, ranging from poor (less than 3.0) to excellent (9.0 to 10.0) academic performance. The highest percentage falls within the "good" category (7.0 to almost 8.0), with 159 students, representing 45.4% of the total 350 observations.

5.2. Reliability test results by Cronbach's alpha

The reliability test results, determined using Cronbach's alpha for variables influencing student learning outcomes such as Personal performance, Enthusiasm for learning, Learning motivation, Learning method, Teaching method, Scholarship, Infrastructure, Management of the Faculty of Economics and Business Administration, Influence of friends, Family and social influence, demonstrate high reliability. Moreover, the Cronbach alpha coefficients exhibit strong values, ranging from 0.684 to 0.919, surpassing the threshold of 0.6, indicating their reliability. The overall correlation coefficients for all variables exceed 0.3, affirming that these variables aptly elucidate the importance of the respective scales.

Additionally, the dependent variable Learning outcomes were tested using Cronbach's alpha, yielding a value of 0.777, surpassing the 0.6 threshold, with a minimum overall variable correlation of 0.576, indicating the suitability of this scale for factor analysis and regression.

5.3. Results of EFA

The initial study incorporated 45 observed variables categorised into 10 groups of factors influencing student learning outcomes, and these were subjected to EFA (exploratory factor analysis). The criteria for factor loadings included values >0.3 and eigenvalues >1, with unsatisfactory observations being discarded. The 1st, 2nd, 3rd, and 4th EFA analyses yielded acceptable results for KMO, Bartlett, and Eigenvalues. However, there were still variables with weight differences <0.3, necessitating their removal.

The fifth EFA analysis results indicate a KMO coefficient of 0.836, satisfying the condition 0.5 <KMO<1. This signifies that exploratory factor analysis is suitable for the actual data. Bartlett's test with Sig=0.000 <0.05 demonstrates that the characteristic variables exhibit linear correlations with the representative factors. The total variance extracted amounts to 73.43%, signifying that 73.43% of the variance in factors is explained by the observed variables and coefficients. Moreover, the eigenvalue is 1.058, exceeding the threshold of 1, thus confirming the suitability of factor analysis in the final analysis.

Consequently, following exploratory factor analysis, five components have been extracted: Scholarship (HB), Teaching Method (GD), Family and Society (FS), Infrastructure (VC), and Motivation (DC) (Table 4).

Table 4. Rotated component Matrix[a]

	Component				
	1	*2*	*3*	*4*	*5*
HB4	0.874				
HB3	0.863				
HB1	0.856				
HB2	0.855				
GD2		0.850			
GD1		0.784			
GD4		0.701			
FS2			0.805		
FS1			0.791		
FS3			0.605		
VC3				0.865	
VC1				0.837	
DC2					0.844
DC4					0.684

Source: Survey "Factors affecting students' learning outcomes at the Faculty of Economics and Business Administration, An Giang University" in 2023.

The results of the exploratory factor analysis (EFA) conducted on the dependent variable Learning outcomes (KQ) indicate that the KMO coefficient is 0.739, which satisfies the condition of 0.5<KMO<1. Additionally, Bartlett's test with a significance level (Sig.) of 0.000, being less than 0.05 further affirms the suitability of the exploratory factor analysis for the actual data. These results suggest that the variables are linearly correlated with the factor being analysed. The total variance extracted is 60.35%, which is greater than 50%, showing that the change of factors is explained by the observed variables (Table 5).

Table 5. Component Matrix[a]

	Component
	1
KQ1	0.789
KQ4	0.775
KQ2	0.774
KQ3	0.770

Source: Survey "Factors affecting the students' learning outcomes at Faculty of Economics and Business Administration, An Giang University" in 2023.

5.4. Regression analysis

The regression analysis model is constructed upon five independent variables derived from EFA (exploratory factor analysis), namely HB, GD, FS, VC, and DC. The authors calculate the mean value of these five factors and subsequently conduct a regression analysis.

In this section, the authors employ multiple linear regression to test the model, hypotheses and ascertain the correlation between factors and the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University.

Through the utilization of SPSS software, the results of the regression analysis are as follows:

The coefficient R^2 is often employed to evaluate the suitability of a multiple linear regression model (Table 6). A higher R^2 indicates a more fitting model. In the model summary, R^2 is obtained as 0.408, with an adjusted R^2 of 0.399, demonstrating the appropriateness of the factors incorporated in the model. The figure of 40.8% meets the standard for appropriateness (Table 6). ANOVA analysis reveals that the parameter F has Sig.=0.000, indicating that the constructed model aligns with the collected data, and the retained variables are

statistically significant at the 5% significance level. Consequently, the independent variables retained in the model are linked to the dependent variable, which is Learning Outcomes. In other words, the model elucidates 40.8% of the influence of these factors on the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University (Table 6).

Table 6. Model summary[b].

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Change statistics					Durbin-watson
					R^2 change	F change	df1	df2	Sig. F change	
1	0.639[a]	0.408	0.399	0.3321	0.408	47.364	5	344	0.000	2.021
a. Predictors: (Constant), DC, VC, GD, HB, FS										
b. Dependent variable: KQ										

Source: Survey "Factors affecting students' learning outcomes at the Faculty of Economics and Business Administration, An Giang University" in 2023.

The results of the regression analysis indicate that all variables have coefficients with Sig. values <0.05, demonstrating their suitability for the authors' constructed model. However, the variable GD has a Sig. value of 0.256, which is greater than 0.05, suggesting that this variable does not significantly correlate with KQ. Consequently, the correlated variables have been retained in the regression model, and no issues related to multicollinearity were observed, as all variables in the model had VIF values below 2 (Table 7).

The regression equation, incorporating the standardised Beta coefficients of the model developed by the authors, can be expressed as follows:

$$KQ = 0.422FS + 0.156VC + 0.119DC + 0.103HB + \varepsilon$$

where KQ: learning outcomes; FS: family and societal influence; VC: infrastructure; DC: learning motivation HB: scholarship; ε: error term.

Based on the results of the regression analysis, it can be concluded that 40.8% of the variance in the dependent variable (economic output) is attributed to changes in the independent variables, while the remaining 59.2% can be attributed to other unaccounted factors outside the International Relations Influence Model for Students of the Faculty of Economics and Business Administration at An Giang University.

The most influential factor affecting the learning outcomes of students in the Faculty of Economics and Business Administration at An Giang University is family and social factors, as indicated by the beta coefficient of 0.422, which is the highest among all factors considered. Schools and families should take proactive measures to support students in achieving positive learning outcomes.

The second most influential factor is the quality of facilities, with a coefficient of 0.156, also showing a positive impact on KQ. Therefore, addressing infrastructure weaknesses should be a priority to enhance students' learning experiences.

The motivation of students to learn is the third significant factor affecting the academic

Table 7. Coefficients[a].

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	0.771	0.247		3.124	.002					
	HB	0.073	0.035	0.103	2.126	0.034	0.392	0.114	0.088	0.731	1.367
	GD	0.056	0.050	0.054	1.139	0.256	0.351	0.061	0.047	0.760	1.316
	FS	0.431	0.052	0.422	8.328	0.000	0.585	0.410	0.346	0.672	1.489
	VC	0.108	0.032	0.156	3.381	0.001	0.390	0.179	0.140	0.810	1.234
	DC	0.131	0.051	0.119	2.590	0.010	0.341	0.138	0.107	0.813	1.231
a. Dependent Variable: KQ											

Source: Survey "Factors affecting students' learning outcomes at the Faculty of Economics and Business Administration, An Giang University" in 2023.

performance of students at An Giang College of Economics and Business, with a beta coefficient of 0.119. Schools should create conducive environments and foster student motivation to excel in their studies.

Lastly, scholarships have a positive effect on the academic performance of students at An Giang University's Faculty of Economics and Business Administration, as indicated by a beta coefficient of 0.103. This underscores the importance of offering scholarships to incentivise students to excel academically.

In summary, the impact of the independent variables on the dependent variable follows the order: FS (strongest), VC (second), DC (third), and HB (fourth).

5.5. Results of the analysis of the current state of factors affecting student learning outcomes

The research findings indicate that students in the Faculty of Economics and Business Administration generally exhibit an average level of agreement with component variables related to Family and Society, Scholarships, Infrastructure, Motivation, and Teaching. The mean values and corresponding levels of consent are presented in Table 8.

Table 8. Mean values of factors.

Factors	Mean	Level of consent
Family and society	***4.110***	***Agree***
FS1	4.014	*Agree*
FS2	4.163	*Agree*
FS3	4.154	*Agree*
Scholarship	***3.878***	***Agree***
HB1	3.840	*Agree*
HB2	3.794	*Agree*
HB3	3.943	*Agree*
HB4	3.934	*Agree*
Infrastructure	***3.733***	***Agree***
VC1	3.789	*Agree*
VC3	3.677	*Agree*
Motivation	***4.142***	***Agree***
DC2	4.177	*Agree*
DC4	4.106	*Agree*

Source: Survey "Factors affecting the students' learning outcomes at the Faculty of Economics and Business Administration, An Giang University" in 2023.

The analysis reveals that three groups fall within the "agree" category, with mean factor scores ranging between 3.41 and 4.2 (Table 8):

Family and social factors, which exert a strong influence on a student's learning outcomes, although with a medium score lower than that of motivation. Factor FS2 (family care improves learning outcomes) has the highest mean value, indicating that family's attention plays a significant role in influencing student learning outcomes.

The scholarship group, with four evaluation factors. Among these, HB3 (Scholarships help you be more committed to your studies) has the highest average score of 3.943 points, indicating a growing interest in student scholarships.

For the Athletic Performance group, where the highest-rated factor is DC2 (Investing in your studies is your top priority), with an average score of 4.177. This underscores the importance of prioritizing learning compared to other activities.

In the Facility group, VC1 (Good Classroom Quality) has the highest average score at 3.789, highlighting the importance of quality classrooms in the learning process.

6. Conclusions and suggestions

In conclusion, learning outcomes are significantly influenced by various factors. The evaluation results for the Scale of Factors Influencing Learning Outcomes are reliable, meeting the criteria (Cronbach's alpha >0.6 and overall correlation >0.3). Factor analysis through EFA extracted five influential groups: family, society, facilities, motivation, scholarship, and teaching methods.

Regression analysis identifies four key groups of factors that influence learning outcomes: family and society, academics, institutions, and motivation. Family and social factors, in particular, exert a substantial impact on learning outcomes. To enhance student learning outcomes, it is advisable to consider family and social factors in the educational approach.

6.1. Proposals to improve student learning outcomes with family and social factors

Families should actively provide support and assistance to students facing academic challenges. When students experience high academic pressure, families play a crucial role in sharing and encouraging students to alleviate this pressure. Additionally, family guidance can offer students insights into their future career paths, aiding them in acquiring relevant

knowledge that will support their future work. To further support students, families can help alleviate the financial burden associated with coursework and the procurement of related learning materials. Schools should also explore opportunities for diversification and collaboration with local and regional businesses, providing Economics and Business students with exposure to the business environment. This approach ensures that students are well-informed about the learning process, ultimately leading to improved learning outcomes.

6.2. Proposals to improve student learning outcomes with infrastructure elements

While the school provides internet access throughout the campus, it is important to address the issue of weak and unreliable network connections. Schools should consider upgrading their network systems with more robust transmission lines to facilitate activities that require reliable internet connectivity during the learning process. Additionally, schools must prioritise regular maintenance and inspections to ensure prompt repairs without disrupting students' learning experiences.

6.3. Proposals to improve student learning outcomes with motivational elements

To boost student motivation, schools can establish partnerships with companies, organise seminars and information sessions, offer career opportunities to Economics and Business students, and arrange visits to corporate departments. Career-sharing sessions inject enthusiasm and provide students with a deeper understanding of potential career paths after graduation. This increased awareness can serve as a motivating factor, driving students to excel in their studies as they accumulate knowledge for their future careers. Within the classroom, motivational strategies such as awarding points, fostering debates, and encouraging students to voice their opinions with teachers and peers can further enhance engagement and participation. Recognizing and rewarding academic excellence with scholarships can also significantly increase students' interest and concentration in their studies.

6.4. Proposals for improving student learning outcomes through scholarship programs

Schools should consider diversifying their scholarship offerings based on student academic performance. Scholarships or grants aimed at improving English language skills can be awarded to students who excel in English exams. Additionally, schools can promote scientific research among students, fostering a culture of learning and knowledge application. This approach encourages students to strive for academic excellence and continuous improvement in their academic performance.

6.5. Research limitations and future work

This study primarily focused on identifying the factors influencing the academic performance of students within the Faculty of Economics and Business Administration, leading to a narrow microanalysis within its scope. Future research endeavours may involve conducting more extensive studies encompassing students from all eight faculties at An Giang University. This broader approach would allow for comparisons of learning outcomes among various faculties, providing valuable insights into academic performance across different academic disciplines.

CRediT author statement

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COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

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