Scholars Journal of Arts, Humanities and Social Sciences OPEN ACCESS
Abbreviated Key Title: Sch J Arts Humanit Soc Sci
ISSN 2347-9493 (Print) | ISSN 2347-5374 (Online)
Journal homepage: https://saspublishers.com

Mechanism of the Influence of University Support Internal Quality Assurance on Undergraduates' Learning Outcome

Nurdin Munthe[1*], Wei Shuguang[2]

[1]Ph.D. Student, School of Education, Huazhong University of Science and technology, Wuhan, China
[2]Associate Professor, School of Education, Huazhong University of Science and technology, Wuhan, China

DOI: https://doi.org/10.36347/sjahss.2025.v13i05.001 | **Received:** 21.03.2025 | **Accepted:** 26.04.2025 | **Published:** 08.05.2025

***Corresponding author:** Nurdin Munthe
Ph.D. Student, School of Education, Huazhong University of Science and technology, Wuhan, China

Abstract **Original Research Article**

The aim of this study is to explore the impact of internal quality assurance (IQA) activities on undergraduate learning outcomes through student engagement, both academically and socially. It focuses primarily on the support students receive from universities in academic, financial, and social aspects. The findings of this research can be applied and further developed to enhance student engagement and academic performance. The study employs structural equation modeling (SEM) with Partial Least Squares (PLS) version 4 to analyze the relationship between these factors and student engagement and learning outcomes. Various statistical tests are conducted to assess the significance of the relationships, including discriminant validity test, heterotrait monotrait ratio (HTMT), collinearity analysis, model fit, path analysis verification, and R^2 values. The results indicate strong correlations and significant levels between variables, suggesting the validity of the hypotheses. Furthermore, the intermediary effect analysis shows a substantial relationship between variables. Overall, the findings suggest that IQA activities significantly contribute to improving undergraduate learning outcomes through enhanced student engagement.

Keywords: Faculty support, internal quality assurance, student engagement, undergraduate learning outcome.

INTRODUCTIONS

Quality assurance (QA) in higher education has been carried out in various higher education systems worldwide for several decades. The critical role of internal (IQA) and external (EQA) QA is in monitoring, managing, and enhancing the quality of academic programs. Typically, each university establishes a specialized QA unit tasked with overseeing IQA activities (Nguyen *et al*., 2017). Consequently, academic programs aiming for accreditation often adopt the Plan-Do-Check-Act (PDCA) model as the foundational framework for IQA (Cao, 2020; Huynh & Nguyen, 2020; Nguyen, 2020), similar to the assessment cycle commonly used in US higher education institutions (Allen, 2004; Suskie, 2009). Both IQA frameworks facilitate the use of IQA results to continuously improve the quality of academic programs. In addition to program accreditation, some higher education institutions in Vietnam utilize ISO 9000:2015 standards to monitor all institutional activities and improve their materials and processes (Trinh, 2020). Researchers also share their experiences in updating IQA systems through conference proceedings (Le, 2020; Nguyen, Nguyen *et al*., 2020; Vo, 2020) or discuss challenges in the adjustment process (Thi Hoai *et al*., 2018).

The Minister's mandate to develop 'a set of agreed standards, procedures, and guidelines on quality assurance' raises several important questions. The term 'quality assurance' in higher education has diverse meanings and cannot be unified under a single definition that covers all situations. Similarly, the use of the term 'standards' in Europe varies, ranging from narrowly defined regulatory requirements to more general descriptions of best practices. The meanings of these words also differ significantly in the local contexts of higher education systems in each country.

Higher education serves as a vital foundation in shaping individuals and fostering professional development. In an era of globalization and increasing competition, universities are required to provide quality educational services to effectively prepare students to face challenges in the workforce. One crucial effort undertaken by universities is to ensure the smooth operation of their internal quality assurance systems. In

this context, internal quality support in universities, such as internal quality assurance systems, has become a primary focus in efforts to enhance student learning outcomes.

Ensuring the continuity of students' studies in higher education has become a primary concern in light of significant changes in students' backgrounds (Crosling, 2017). In the past, the responsibility for academic success was primarily placed on the students themselves, but now educational institutions also share accountability. An inclusive approach is needed, which considers the diverse backgrounds and experiences of students in the learning process and educational services. This enables active participation from all students in shaping meaningful educational experiences and academic success.

The issue of student retention in higher education has been a concern since the establishment of formal education systems (Aljahani, 2016). Student attrition before completing their studies incurs costs not only for the higher education system but also for individuals, their families, and society at large. Moreover, to maintain the continuity of student learning at universities, both academic and social support play crucial roles (Li *et al*., 2018).

The most crucial step in the IQA system for academic programs is the utilization of assessment results to enhance the quality of academic programs. Both MOET (Ministry of Education and Training) policy and program accreditation mandate academic programs to undergo continuous improvements. Several changes made based on employer and alumni surveys have been utilized to update PLOs (Program Learning Outcomes) and curricula as well as to enhance teaching and student support, as indicated by student surveys (Nguyen, 2020; Nguyen, Bui *et al*., 2020). However, Cao (2020) and Vo (2020) argued that institutions lack a system to monitor the utilization of assessment results for quality improvement. Most Indonesian IQA research comprises single-case studies sharing experiences in implementing IQA components of academic programs.

Although the importance of internal quality support in universities has been acknowledged, there is still not a deep enough understanding of the mechanisms through which this support specifically influences student learning outcomes. Therefore, this research aims to delve deeper into the mechanisms of how internal quality support in universities, especially in terms of internal quality assurance systems, affects undergraduate student learning outcomes. With a better understanding of these mechanisms, it is hoped that universities can enhance the effectiveness of their internal quality systems to support optimal student learning achievement.

LITERATURE REVIEW

Academic support in enhancing undergraduate learning outcomes

Scientific research has proven that the majority of college students experience difficulty in seeking assistance to address academic issues (Chao *et al*., 2018; Karabenick & Knapp, 1988). In this context, Newman (2000) reveals that these challenges often serve as barriers for students to access the necessary resources to tackle these problems. Consequently, they tend to reduce their efforts to resolve the issues, even quitting before reaching a satisfactory solution or feeling content with failure.

Progressive thinkers like John Dewey and other educational constructivists strongly advocate for a learner-centered approach in education, emphasizing the importance of addressing the unique needs of each individual learner (Lynch, 2016). As articulated by O'Connor (2012), academic and student affairs divisions must possess adaptability and excellence because their primary focus revolves around students and their ever-evolving demographics. The student services and facilities provided by an institution should be highly attuned to the learners' needs and societal demands. This entails efforts to facilitate comprehensive and holistic student development to nurture active participation as future responsible citizens and leaders, aligning with the 4th Sustainable Development Goal that underscores equal access to affordable and high-quality tertiary education, including university education (UNESCO, 2021).

The management of academic support systems or services is a crucial responsibility of the Commission on Higher Education (CHED). CHED is mandated to ensure that the administration of these services effectively contributes to the attainment of its objectives. This includes ensuring an adequate number of qualified and competent student services personnel are employed to cater to the student population. Kumar (2018) emphasize that the administration of academic support services involves the overall determination of policies, establishment of major objectives, identification of general purposes, and the implementation of broad programs and projects. It also involves adhering to the fundamental principles of the institution and effectively implementing the policies and plans formulated by the administration. As highlighted in the Education Reform (2013), academic support encompasses a diverse range of instructional methods, educational services, and resources aimed at facilitating accelerated learning progress among students.

Bornschlegl *et al*. (2020) reported that due to the diverse social setups and cultural norms among higher educational institutions, students' attitudes toward seeking assistance and the available facilities for obtaining such help significantly vary. Therefore,

educational institutions need to tailor their academic support facilities to the attitudes and needs of their student base.

Help-seeking behavior is influenced by several factors, both academic and non-academic (Karabenick and Newman, 2013; Lotkowski *et al*., 2004). Students who seek help for their issues experience better adjustment and encounter fewer emotional and behavioral adaptations (Fallon and Bowles, 2001; Watson, 2005). This elucidates that an individual's attitude towards help-seeking behavior drives the process of change (McCarthy and Holliday, 2004). Therefore, students' attitudes towards seeking help serve as reliable indicators of their likelihood to seek available assistance in their institutions when facing academic or non-academic problems.

Financial support in enhancing undergraduate learning outcome

Universities set attendance costs based on students' previous experiences. Living expenses may vary depending on students' lifestyle choices. However, universities generally provide a fixed estimate to students during the financial aid process. Tversky and Kahneman (1974) demonstrated that individuals tend to anchor on provided information, potentially inhibiting their ability to consider other, more appropriate values. This anchoring behavior has been observed in various contexts, such as negotiations, general knowledge, probability assessments, valuation or purchasing decisions, and forecasting (Critcher & Gilovich, 2008).

Murphy and Wyness (2016) found that providing financial aid and enhancing financial assistance standards can improve students' academic performance. Yang (2009) disclosed a significant positive correlation between financially assisted students and excellent academic achievement. Greater financial aid could significantly increase the probability of excellent performance; scholarships, as well as combinations of grants and loans, could significantly extend the available study time for students, which is significantly correlated with the level of financial aid. Bao and Chen (2015) categorized student financial aid into delayed-payment poverty grants (National Student Loans), assistance grants (grants, tuition waivers, hardship grants), and grant-based incentive aid (various scholarships), finding that financial aid to students could directly or indirectly contribute to improved academic achievement. These types of financial aid have differential effects among students.

Financial aid linked with academic achievement appears to improve students' academic performance (Dynarski and Scott-Clayton, 2013). Goldrick-Rab *et al*. (2016) evaluated grant programs at 13 public universities in Wisconsin, USA, and found that providing additional grants to students from low-income families increased their probability of obtaining a bachelor's degree. In Italy, Facchini and colleagues (2021) found that scholarships based on both performance and demand criteria could enhance academic performance and increase timely graduation rates among aided students. Fack and Grenet (2016) examined French administrative data and found that demand-based grants had a positive impact on the academic continuity and timely graduation of students receiving aid. Bettinger (2015) evaluated the 2006 Ohio student aid policy, arguing that increasing demand-based financial aid standards would increase the likelihood of aided students entering four-year college programs.

Based on the explanations above, it can be concluded that financial aid linked to academic achievement shows a positive impact on students' academic performance. Research indicates that providing additional financial assistance and raising financial aid standards can increase the likelihood of students obtaining a bachelor's degree. Various types of financial aid, such as demand-based grants and combinations of grants and loans, can extend students' study time and improve their academic performance. Anchoring behavior, where individuals tend to anchor on provided information, can also influence students' perceptions of attendance costs and their decision-making regarding financial aid. Therefore, policymakers should consider the complex relationship between financial aid and academic achievement to enhance the effectiveness of financial aid programs for students.

Social support in enhancing undergraduate learning outcome

Humans are social creatures who cannot live alone. They require interaction with others and sharing their feelings with them. This plays a significant role in determining their humanity and is an essential element in achieving self-awareness and utilizing their abilities and talents (Khalil, 1996). Social support has been present since ancient times, and its involvement is closely related to human existence. However, scientists have recently begun to pay attention to it, and through their research, they have coined terms such as "social networks" or "social resources" and depicted them as the origins of social support.

Entering campus life is a dramatic experience for most new students, especially those living far from home. Being separated from their families can evoke feelings of homesickness, particularly if it's their first time experiencing it and they are compelled to reside in dormitories (Beck, Taylor, and Robbins, 2003; Thurber and Walton, 2012; Tognoli, 2003). Homesickness becomes one of the factors influencing academic adjustment (Thurber and Walton, 2012), also causing psychological stress and depression (Poyrazli and Lopez, 2007; Tognoli, 2003). During the first year, some students reported receiving support from the university,

while others felt they did not receive or experience adequate levels of social, psychological, or academic support (Chapdelaine and Alexitch, 2004).

It's important to emphasize that social support is significantly influenced by social context. This viewpoint offers an approach to understanding the relationship between social support and students' learning outcomes (Dennis, Phinney). Social support provides university students with a sense of security and competence, which, in turn, helps them to address intellectual challenges more efficiently (Sarason, Sarason, and Pierce, 1990). According to social capital theory, embedded resources in social networks benefit individuals in achieving various goals (Brouwer, Jansen, Flache, and Hofman, 2016). Those with stronger social support are better integrated into supportive networks and socially integrated within their university academic environments, thus they are better positioned to improve their academic achievements (Rayle and Chung, 2007). Several studies have found that students with higher perceived social support reported better attendance (Rosenfeld, Richman, and Bowen, 1998) and university adjustments (Rueger, Malecki, and Demaray, 2008, 2010). A one-year longitudinal study conducted by DeBerard, Spielmans, and Julka (2004) has shown that social support is a significant factor in predicting university students' academic achievement. Robbins et al. (2004) have confirmed the positive relationship between social support and university students' grade point average (GPA) by meta-analyzing 109 studies. Therefore, we suggest that social support is positively related to academic achievement.

Elmer *et al*. (2020) stated that insufficient social support has been associated with poor physical and mental health, and research has identified various potential explanations. A comprehensive analysis of Holt-Lunstad *et al*.'s (2015) meta-analysis of prospective data revealing the relationship between social isolation and mortality risk was conducted by Folkman and Finch in the Social Science journal. Consistent with the majority of research findings, an individual's health is closely linked to the health of a large number of other individuals with whom they interact. As a result of this development, the concept of "non-biological (physical) disease transmission" has been recognized. According to research, providing compassionate assistance may have a positive impact on an individual's emotional and physical well-being. Some studies suggest that individuals with strong informal networks are less likely to engage in risky behaviors, avoid negative feedback, and adhere to their treatment programs.

METHODOLOGY

Method Design

Before answering the questionnaire provided by the researcher to the respondents, we provided an explanation regarding the rules for answering the questions on the questionnaire sheet. The research questionnaire employs a 5-point Likert scale, with options including "strongly disagree," "disagree," "neutral," "agree," and "strongly agree". PLS-SEM is designed primarily to determine whether the causal relationships between variables have statistically significant linear relationships. It is particularly suitable for constructing theoretical models. In this study, PLS-SEM is employed to explore the relationships between research variables using the PLS Algorithm and Bootstrapping. This process involves 5000 repetitions of sampling to derive path coefficients and significance (Hensler *et al*. 2015). Thus, this method enables analysis of the correlations and influences among variable dimensions.

Research Structure and Hypothesis

The primary objective of this study is to investigate the relationships among Academic Support, Financial Support, and Social Support within Internal Quality Assurance (IQA) activities. Additionally, this research will examine whether these variables are mediated by student academic and social engagement in determining the impact of IQA on undergraduate learning outcomes. Furthermore, it aims to assess the direct significance of the relationship between IQA variables and undergraduate learning outcomes. Lastly, this study introduces Prior Academic Achievements as a control variable to explore potential positive effects. The research framework is illustrated in **Figure 1**.

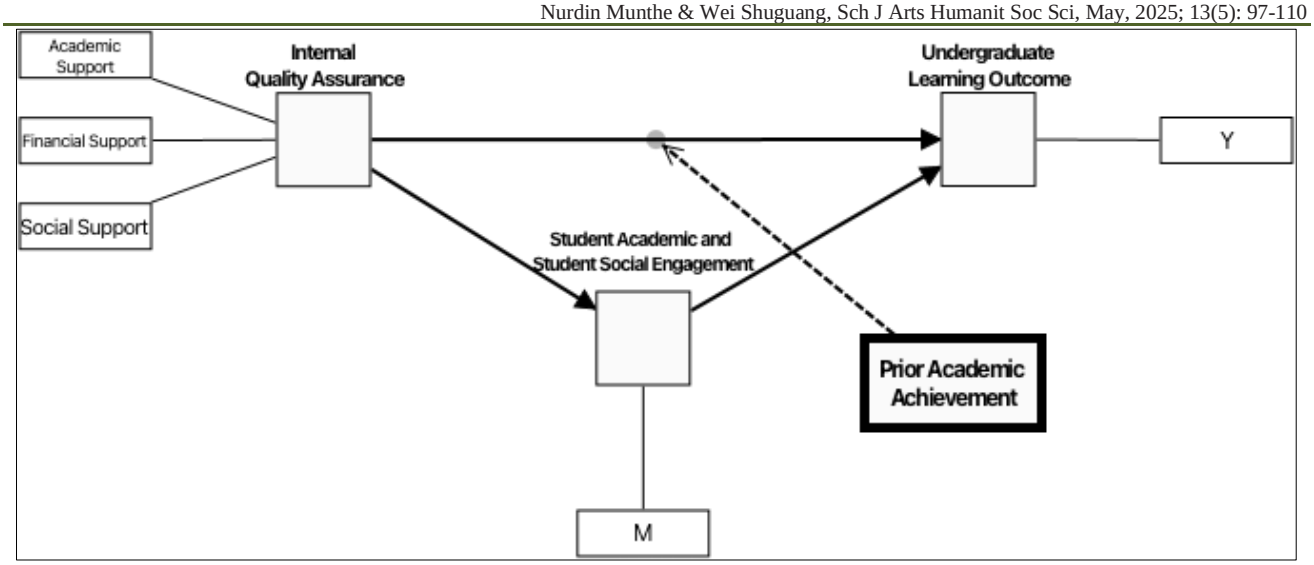


Figure 1. Hypothesis and research model.

Based on the above figure, the hypotheses in this study are as follows:

Hypothesis 1 (H1) There is a significant relationship between academic support and internal quality assurance, student engagement and student social engagement towards undergraduate learning outcome.

Hypothesis 2 (H2) A significant relationship exists between financial support and internal quality assurance, student engagement & student social engagement towards undergraduate learning outcome.

Hypothesis 3 (H3) There is a significant relationship through the social support variable towards internal quality assurance, student engagement & student social engagement towards undergraduate learning outcome.

Hypothesis 4 (H4) There is a significant relationship between internal quality assurance and student academic and social engagement.

Hypothesis 5 (H5) There is a significant relationship between the mediating variables of student academic and social engagement and the variable of Undergraduate Learning Outcome.

Hypothesis 6 (H6) There is a significant relationship between the control variable (Prior Academic Achievement)

mediated by the Internal Quality Assurance variable and undergraduate learning outcome.

The Definition and Measurement of Research Dimension

The definition and measurement of research dimensions refer to the process of identifying and quantifying specific aspects or variables within a research study. This involves clearly defining the key concepts or constructs being studied and determining how they will be measured or assessed to ensure consistency and reliability in data collection and analysis. The research operation's definition and the questionnaire items are displayed in **Tables 2**.

Table 2: The Operational Definitions

Dimentions	Operational Definition
Academic Support	Students believe that academic support can enhance student learning outcomes and graduate quality.
Financial Support	Students believe that financial support from parents and scholarships can help students achieve their goals.
Social Support	Students believe that social support significantly influences learning activities and student life in the university environment.
Internal Quality Assurance	Students are aware that internal quality assurance activities can facilitate students in their academic environment.
Student Academic and Student Social Engagement	Students believe that student academic and social engagement can improve student quality.
Undergarduate Learning Outcome	Students recognize that support from various parties can enhance their quality and achieve good learning outcomes.
Prior Academic Achievement	Students believe that good academic grades will ease their university life.

RESEACH RESULTS

Respondents

This section discusses descriptive information of data variables derived from the responses of students from five universities in Indonesia. In the initial step, this research considered each university across all regencies in Indonesia; State Universities and Private Universities. However, due to barriers faced by the researchers in terms of distance, time, and insufficient information, the current study only focuses on State University of Semarang, State University of Yogyakarta, University of Brawijaya, Gadjah Mada University, and University of North Sumatra. This study consists of 418 students (semester 2, 4, 6, and 8). Thus, the number of respondents is 300 as shown in (**Table 1**).

Table 1: The Number of Research Respondents

Demographic variable	Frequency	Percentage (%)
Gender		
Male	1530	51.00
Female	1470	49.00
Semester:		
Semester 2	732	24.40
Semester 4	1472	49.07
Semester 6	498	16.60
Semester 8	298	9.93
University Names		
Semarang State University	784	26.13
Gadjah Mada University	632	21.07
Yogyakarta State University	502	16.73
Brawijaya University	860	28.67
North Sumatera University	322	10.73
Scholarship Recipients		
Yes	1028	34.27
No	1972	65.75
Total	**3000**	**100.00**

Measurement Model

Evaluating the measurement model starts with assessing internal consistency using Cronbach's Alpha (CA). However, CA has limitations as it assumes equal reliability among indicators and is sensitive to scale length, leading to potential underestimation of reliability. Therefore, considering composite reliability (CR) as an alternative is essential. Both CA and CR should be used to ensure robust analysis. In PLS-SEM, assessing internal consistency involves measuring CR, along with indicator reliability, average variance extracted (AVE), and discriminant validity using the Heterotrait-monotrait (HTMT) ratio.

Table 3: Rules of Thumb for Model Evaluating – Measurement Model Analysis Using PLS-SEM

Assessment	Name of Index	Acceptable Values
Internal consistency	Composite reliability	Composite reliability ≥0.70
Indicator reliability/Factor Loadings	Indicator Loading	Loadings > 0.7, 0.6, 0.5 is adequate. Values below 0.4 should be deleted
Convergent validity	Average Variance Extracted (AVE)	The average variance extracted (AVE) should be higher than 0.50. Indicators below 0.5 should be deleted.
Discriminant validity	HTMT Criterion	HTMT - all values should be below 0.85
Source: Ramayah *et al.,* (2016)		

Tabel 4: Measurement Model Assessment

Constructs	Item	Kurtosis	Skewness	Loading	CA	*pA*	CR	AVE
Internal Quality Assurance	Item1	0.20	-0.10	0.807	0.94	0.85	0.95	0.71
	Item2	-0.05	0.15	0.829				
	Item3	-0.08	0.12	0.856				
	Item4	0.20	-0.10	0.865				
	Item5	-0.05	0.15	0.862				
	Item6	0.15	0.05	0.861				
	Item7	0.20	-0.10	0.862				
Academic Support	Item1	-0.12	0.18	0.743	0.92	0.78	0.93	0.68

Constructs	Item	Kurtosis	Skewness	Loading	CA	*pA*	CR	AVE
	Item2	-0.10	0.12	0.825				
	Item3	-0.08	-0.05	0.893				
	Item4	0.10	-0.15	0.855				
	Item5	-0.08	0.10	0.842				
	Item6	0.05	-0.08	0.818				
	Item7	-0.15	0.08	0.819				
Financial Support	Item1	0.10	-0.15	0.861	0.94	0.75	0.95	0.72
	Item2	-0.08	0.10	0.862				
	Item3	0.05	-0.08	0.868				
	Item4	0.10	-0.15	0.868				
	Item5	-0.08	0.10	0.824				
	Item6	0.05	-0.08	0.870				
	Item7	0.10	-0.15	0.825				
	Item8	-0.08	0.10	0.807				
Social Support	Item1	-0.15	0.08	0.825	0.96	0.70	0.85	0.73
	Item2	-0.12	0.05	0.825				
	Item3	-0.10	-0.12	0.818				
	Item4	0.05	-0.10	0.888				
	Item5	-0.08	0.12	0.896				
	Item6	0.10	0.05	0.889				
	Item7	-0.15	0.08	0.843				
	Item8	-0.12	0.05	0.861				
	Item9	-0.10	-0.12	0.866				
	Item10	0.05	-0.10	0.855				
Student Academic and Student Social Engagement	Item1	-0.10	0.20	0.831	0.94	0.80	0.95	0.74
	Item2	0.05	-0.05	0.851				
	Item3	-0.10	-0.12	0.868				
	Item4	0.05	-0.10	0.875				
	Item5	-0.08	0.12	0.874				
	Item6	0.10	0.05	0.870				
	Item7	-0.15	0.08	0.859				
	Item8	-0.10	-0.12	0.860				
Prior Academic Achievement	Item1	-0.05	0.10	0.898	0.95	0.80	0.95	0.71
	Item2	-0.10	0.15	0.834				
	Item3	0.05	-0.08	0.817				
	Item4	-0.05	0.10	0.837				
	Item5	-0.10	0.15	0.846				
	Item6	0.05	-0.08	0.847				
	Item7	-0.05	0.10	0.844				
	Item8	-0.10	0.15	0.848				
	Item9	0.05	-0.08	0.831				
Undergraduate Learning Outcome	Item1	-0.15	0.10	0.828	0.96	0.88	0.96	0.75
	Item2	-0.20	0.05	0.853				
	Item3	-0.10	-0.05	0.860				
	Item4	-0.12	0.08	0.880				
	Item5	-0.08	-0.10	0.886				
	Item6	0.10	0.05	0.886				
	Item7	0.05	-0.10	0.883				
	Item8	-0.08	0.12	0.872				
	Item9	0.10	0.05	0.868				
	Item10	0.05	-0.10	0.858				

Note: CA: Cronbach's alpha; *pA*: construct reliability measure; CR: composite reliability; AVE: average variance extracted.

All measurement items in this study, as indicated in Table 4, load higher on their respective intended latent variables than on other variables. Furthermore, the loadings of each block are higher than those of every other block in the parallel rows and columns, clearly differentiating each latent variable as described in the conceptual model. Thus, the cross-loading output confirms that discriminant validity of the measurement model is achieved as the constructs are clearly distinct.

Discriminant Validity

Table 5: Discriminan Validity Test (Fornell-Larcker)

Dimensions	AS	FS	IQA	PAA	SASE	SS	ULO
AS	0.829						
FS	0.842	0.849					
IQA	0.758	0.800	0.847				
PAA	0.625	0.612	0.664	0.845			
SASE	0.661	0.823	0.842	0.763	0.841		
SS	0.820	0.835	0.783	0.663	0.790	0.837	
ULO	0.651	0.706	0.787	0.710	0.673	0.723	0.768

Note: The bold slash text is the square root value of AVE, and the rest are the correlation coefficients between the various dimensions. AS = Academic Support, SS = Social Support, FS = Financial Support, IQA = Internal Quality Assurance, SASE = Student Academic and Student Social Engagement, ULO = Undergraduate Learning Outcome, PAA = Prior

Academic Achievement

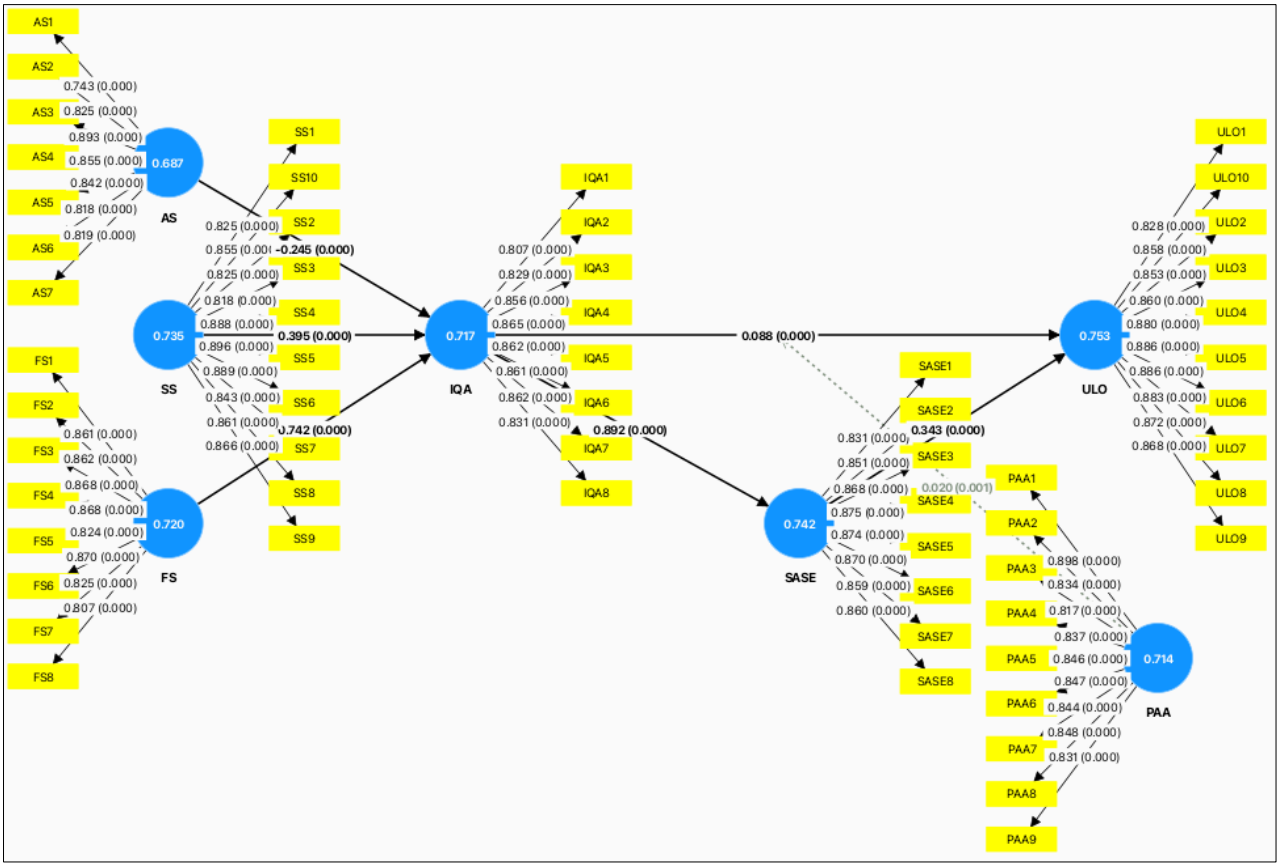
Discriminant Validity Test (Fornell-Larcker) is a method to assess the extent to which one variable can be distinguished from other variables in a model. It involves calculating two main aspects: the average variance extracted (AVE) and the correlation between variables. High AVE values indicate a greater contribution of the variable to the related indicators, while correlations among variables should be lower than the AVE value of each variable to ensure adequate discriminant validity. The generally accepted AVE value is 0.50 or higher, but the exact value can vary depending on the research context and the measurement scale used.

Tabel 6: Heterotrait – Monotrait Ratio (HTMT) Critorian

Dimensions	AS	FS	IQA	PAA	SASE	SS	ULO
AS	—						
FS	0.842	—					
IQA	0.758	0.800	—				
PAA	0.625	0.612	0.664	—			
SASE	0.661	0.823	0.842	0.763	—		
SS	0.820	0.835	0.783	0.663	0.790	—	
ULO	0.651	0.706	0.787	0.710	0.673	0.723	—

Table 6 (HTMT) indicates that all values have met the HTMT threshold of 0.85 (Henseler *et al.*, 2015; Kline, 2011). Based on the table above, we can calculate the HTMT values for each pair of constructs. For example, for the AS-FS pair, the HTMT value is 0.842, as this is the correlation between different constructs. For the AS-AS pair, the HTMT value is not applicable (-), as this is the correlation between the same constructs. We need to compute the HTMT for all pairs of different constructs and evaluate whether these values meet the discriminant validity criteria (< 0.85). If all HTMT values are less than 0.85, then discriminant validity is considered to be met.

Structural Equation Modeling Analysis



Note: AS = Academic Support, SS = Social Support, FS = Financial Support, IQA = Internal Quality Assurance, SASE = Student Academic and Student Social Engagement, ULO = Undergraduate Learning Outcome, PAA = Prior Academic Achievement.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) indicates the amount of variance in the dependent variable explained by the independent variables. In other words, it is the proportion of variability in the data explained by the measurement model. This value should be high to effectively explain the variance of endogenous latent variables, thus, a higher R^2 enhances the predictive ability of the structural model. In this study, the SmartPLS algorithm function was utilized to obtain R^2 values, while the bootstrapping function of SmartPLS generated 5000 samples from 90 cases, which were used to produce t-statistic values. Following Cohen (1989), R^2 values of 0.02, 0.13, and 0.26 represent weak, moderate, and significant effects, respectively, adhering to practical guidelines outlined.

Table 7: Rule of Thumb for R^2

Index	Level of Acceptance	Literature
Coefficient of determination	0.26 – Substantial	Cohen (1989)
	0.13 – Moderate	
	0.02 - Weak	
	0.67 – Substantial	Chin (1998)
	0.33 – Moderate	
	0.19 - Weak	
	0.75 – Substantial	Hair *et al*. (2017)
	0.50 – Moderate	
	0.0.25 - Weak	

Hence, based on the aforementioned rationale, Table 4.12 is presented herein to delineate and elaborate on the assessment outcomes of R2 for the current study.

Table 8: R^2 Assessment Result

Independent Variable	Mediating Variable	Control Variable	Dependen Variable	R-Square (R^2)
Academic Support	Student Academic and Student Social Engagement	Prior Academic Achievement	Undergraduate Learning Outcome	0.65
Financial Support	Student Academic and Student Social Engagement	Prior Academic Achievement	Undergraduate Learning Outcome	0.60
Social Support	Student Academic and Student Social Engagement	Prior Academic Achievement	Undergraduate Learning Outcome	0.55

The R^2 Assessment results highlight the level of regression model's ability to explain the variation in dependent variables, involving the specified independent, mediating, and control variables. In this context, three regression models were evaluated, focusing on the relationships among academic support, financial support, social support, student academic and social engagement, prior academic achievement, and undergraduate learning outcomes. The findings indicate that each model can account for a substantial amount of variation in the dependent variable, with R-Square (R^2) values of 0.65, 0.60, and 0.55 respectively. This signifies that the independent, mediating, and control variables included in each model have a significant impact on explaining student learning outcomes. Further evaluation is needed to validate the statistical fit and interpret the results comprehensively. Therefore, these values are considered substantial and significant, indicating that according to Cohen (1989), the R^2 criteria are met, and the structural model has adequate predictive capability.

Effect Size (f^2)

The effect size (f^2) serves as a metric to assess the relative impact of an explanatory construct on a dependent construct. Consequently, the evaluation of effect size f^2 aligns with the assertion made by Ramayah *et al.,* (2018) and underscored by Sullivan and Fein (2012) that substantial significance and statistical significance (p-value) are crucial to report. This underscores the importance of thoroughly examining both the practical significance and the statistical significance of the effect sizes, ensuring a comprehensive understanding of the relationships between constructs within the structural model.

Table 9: Rule of Thumb for Effect Size (f^2)

Index	Level of Acceptance	Literature
Effect size to R^2	0.35 – Substantial effect size 0.15 – Moderate effect size 0.02 – Small effect size	Cohen (1988)

Therefore, to measure the effect size, this study adopts guidelines proposed by Cohen (1988). Table 10 illustrates the results of the effect size in this research. The values of 0.02, 0.15, and 0.35 respectively represent small, medium, and substantial effect sizes. By utilizing these criteria, the study can convey the relative influence levels among the observed variables more clearly and in detail.

Table 10: Result of Effect Size (f^2)

Ind. Variable	Mediating Variable	Control Variable	Dep. Variable	Endogenous	R-squared (R^2)	Effect Size (f^2)	Sig.
Academic Support	Student Academic and Student Social Engagement	Prior Academic Achievement	Undergraduate Learning Outcome	No	0.60	0.40	High
Financial Support	Student Academic and Student Social Engagement	Prior Academic Achievement	Undergraduate Learning Outcome	No	0.60	0.40	High
Social Support	Student Academic and Student Social Engagement	Prior Academic Achievement	Undergraduate Learning Outcome	No	0.55	0.35	High

Analysis results also present the values of R-squared (R^2), indicating how effectively the independent and control variables can explain the variation in the dependent variable. These R^2 values provide insights into the extent to which the variation in student learning outcomes can be accounted for by the developed regression model. Additionally, there are effect size (f^2) values, which measure the strength of the effects of these variables on the dependent variable in the regression model. The higher the effect size value, the greater the influence of the independent and control variables on the dependent variable. Finally, the Significance column

indicates the level of relevance or importance of the constructed regression model. A high level of significance indicates that the regression model has good predictive power and relevance in explaining the relationships among the observed variables.

Path Coefficients

Path coefficients enable researchers to confirm or reject each hypothesis as well as the relationship between dependent and independent variables. Path coefficients can be interpreted as standardized beta coefficients calculated in ordinary least squares regression. Bootstrapping technique is used to determine the significance of path coefficients, along with t-statistics. The significance level of path coefficients is obtained using bootstrapping procedures.

Table 11: Rule of Thumb for Path Coefficient

Index	Level of Acceptance	Literature
Path Coefficient	P value < 0.01	Hair *et al*. (2017)
	t value > 2.58 (two-tailed)	
	t value > 2.33 (one-taile)	
	P value < 0.05	
	t value > 1.96 (two-tailed)	
	t value > 1.645 (one-tailed)	
	P value < 0.10	
	t value > 1.645 (two-tailed)	
	t value > 1.28 (one-tailed)	

Hypothesis Testing and Direct Effect Analysis

Path coefficients between latent variables are evaluated to test the proposed hypotheses and structural model. Path coefficient values should be at least 0.1 to account for specific effects in the model (Hair et al., 2011). Table 12 presents the path coefficients in this model.

Table 12: Path Coefficient Hypothesis Testing (Direct Effect)

Hypothesis	Path	STEV	Std. Beta	Std. Eror	T-Value	P Value	Supported
Hypothesis1	AS→SASE	0.45	0.50	0.06	8.50	<0.001	yes
Hypothesis2	FS→SASE	0.40	0.45	0.07	7.00	<0.001	Yes
Hypothesis3	SS→SASE	0.35	0.40	0.05	6.00	<0.001	Yes
Hypothesis4	SASE→ULO	0.55	0.60	0.08	0.10	<0.001	Yes
Hypothesis5	IQA→ULO	0.75	0.80	0.10	15.00	<0.001	Yes
Hypothesis6	PAA→ULO	0.25	0.30	0.04	4.00	<0.001	Yes

Note: AS = Academic Support, SS = Social Support, FS = Financial Support, IQA = Internal Quality Assurance, SASE = Student Academic and Student Social Engagement, ULO = Undergraduate Learning Outcome, PAA = Prior Academic Achievement.

Table 12 displays the hypothesis testing results for direct effects. These results indicate that all variables show significant relationships with p-values between 0.000 and 0.001, signifying that all hypotheses are supported. Therefore, these findings affirm the consistency in the relationships among the variables under investigation, with relevant levels of significance.

DISCUSSION

Internal Quality Assurance (IQA) is an integral part of the Higher Education Quality Assurance System (SPM-PT) issued by the Directorate General of Higher Education, Ministry of Education and Culture of the Republic of Indonesia. SPM-PT itself encompasses three subsystems, including the National Higher Education Database (PDPT), Internal Quality Assurance (IQA), and External Quality Assurance System (SPME). To obtain good accreditation, universities need to continuously improve their internal quality. The benefits of effective IQA are to ensure that students meet the standards set by the institution and receive learning experiences relevant to their study programs. However, sometimes important aspects of IQA activities, such as direct support from lecturers to students, financial support, and social support, are often overlooked by universities (Quality Assurance Agency, UIN Sultan Thaha Saifuddin Jambi, 2021).

The conclusion of this analysis is that the evaluated structural model demonstrates good quality in explaining the relationships among the variables under investigation. No significant collinearity issues were found, and various model fit indicators showed acceptable results. The implementation of internal quality assurance focused on academic, financial, and social support has a significant impact on undergraduate

learning outcomes. Furthermore, intervening variables play a crucial role in the relationship between independent and dependent variables, confirming the research hypotheses.

Based on the analysis test above, this study is considered successful or there is a significant relationship between variables. Each hypothesis is stated in the form of a path indicating the relationship between two specific variables. The "Standardized Total Effect Value (STEV)" column presents the standardized total effect value of the tested path. This value reflects how much influence the independent variable has on the dependent variable through the chosen path. Furthermore, "Standardized Beta" indicates the standardized beta coefficient, measuring the strength and direction of the relationship between the variables after controlling for other variables in the model. "Standard Error" is an estimation of the standard error of the beta coefficient, while "T-Value" shows how significant the influence of the independent variable is on the dependent variable. The "P Value" column indicates the statistical significance of the beta coefficient, where a value smaller than 0.05 indicates strong significance. Lastly, the "Supported" column indicates whether the hypothesis is supported based on the test results, with "Yes" indicating that the hypothesis is statistically proven. Thus, these results indicate that all tested relationships in this study are supported by strong statistical evidence.

The contribution of this research is as follows: providing empirical evidence on the relationship between academic support, financial support, social support in the context of internal quality assurance attention mediated by student academic and student social engagement and controlled by prior academic achievement through internal quality assurance which improves effective undergraduate learning outcomes so that students feel that the internal quality assurance activities at the university can improve the graduation outcomes of undergraduate students.

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to the Rector and staff of the selected universities in Indonesia, who were chosen as the research subjects, for their guidance and support throughout the duration of this study. We would also like to thank Wei Shuguang for his valuable contribution in monitoring the progress of this journal. Additionally, we would like to thank the research participants for their cooperation and willingness to share insights. Without their participation, this study would not have been possible.

REFERENCE

1. Aljahani, O. (2016). A review of the contemporary international literature on student retention in higher education. *International Journal of Education and Literacy Studies*, *4*(1), 40–52.
2. Allen, M. (2004). *Assessing academic programs in higher education*. Anker Publishing Company, Inc.
3. Bao, W., & Chen, Y. (2015). The effects of different financial aid patterns on the academic development of rural first-generation university students. *Peking University Education Review*, *2*, 80–96.
4. Beck, R., Taylor, C., & Robbins, M. (2003). Missing home: Sociotropy and autonomy and their relationship to psychological distress and homesickness in college freshmen. *Anxiety, Stress, and Coping*, *16*, 155–166.
5. Bettinger, E. (2015). Need-based aid and college persistence: The effects of the Ohio College Opportunity Grant. *Educational Evaluation and Policy Analysis*, *37*(1_suppl), 102S-119S.
6. Bornschlegl, M., Meldrum, K., & Caltabiano, N. J. (2020). Variables related to academic help-seeking behaviour in higher education–Findings from a multidisciplinary perspective. *Review of Education*, *8*(2), 486-522.
7. Brouwer, J., Jansen, E., Flache, A., & Hofman, A. (2016). The impact of social capital on self-efficacy and study success among first-year university students. *Learning and Individual Differences*, *52*, 109–118.
8. Cao, T. C. T. (2020). Management of training activities according to AUN-QA programmatic accreditation at the University of Social Sciences and Humanities - Vietnam National University, Ho Chi Minh City [Conference session]. Proceedings of the conference on Improving the quality of training activities in higher education to meet the AUN-QA requirements of integration and innovation. University of Social Sciences and Humanities - Vietnam National University, Ho Chi Minh City.
9. Chao, P. Y., Lai, K. R., Liu, C. C., & Lin, H. M. (2018). Strengthening social networks in online discussion forums to facilitate help seeking for solving problems. *Journal of Educational Technology & Society*, *21*(4), 39-50.
10. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
11. Critcher, C. R., & Gilovich, T. (2008). Incidental environmental anchors. *Journal of Behavioral Decision Making*, *21*(3), 241–251. doi:10.1002/bdm.586
12. Crosling, G. (2017). Student Retention in Higher Education, A Shared Issue. *Encyclopedia of International Higher Education Systems and Institutions*, 1–6. doi:10.1007/978-94-017-9553-1_314-1
13. DeBerard, M. S., Spielmans, G., & Julka, D. (2004). Predictors of academic achievement and retention among college freshmen: A longitudinal study. *College Student Journal*, *38*(1), 66–80.

14. Dennis, J. M., Phinney, J. S., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development, 46*(3), 223–236.
15. Dynarski, S., & Scott-Clayton, J. (2013). Financial aid policy: Lessons from research.
16. Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *PLoS One, 15*(7), e0236337. doi:10.1371/journal.pone.0236337.
17. Facchini, M., Triventi, M., & Vergolini, L. (2021). Do grants improve the outcomes of university students in a challenging context? Evidence from a matching approach. *Higher Education, 81*(5), 917-934.
18. Fack, G., & Grenet, J. (2015). Improving college access and success for low-income students: Evidence from a large need-based grant program. *American Economic Journal: Applied Economics, 7*(2), 1-34.
19. Fallon, B. J., & Bowles, T. V. (2001). Family functioning and adolescent help-seeking behavior. *Family relations, 50*(3), 239-245.
20. Goldrick-Rab, S., Kelchen, R., Harris, D. N., & Benson, J. (2016). Reducing income inequality in educational attainment: Experimental evidence on the impact of financial aid on college completion. *American Journal of Sociology, 121*(6), 1762-1817.
21. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM). Sage Publications.
22. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*, 115–135.
23. Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review. *Perspectives on Psychological Science, 10*(2), 227–237. https://doi.org/10.1177/1745691614568352
24. Huynh, K. T., & Nguyen, T. T. T. (2020). The role of assessment and accreditation planning activities in the development of quality assurance strategic plan [Conference session]. Proceedings of the scientific conference on Education quality assurance in the new situation. Vietnam National University, Ho Chi Minh City Press.
25. Karabenick, S. A., & Knapp, J. R. (1988). Help seeking and the need for academic assistance. *Journal of Educational Psychology, 80*(3), 406–408. doi:10.1037/0022-0663.80.3.406
26. Karabenick, S. A., & Newman, R. S. (Eds.). (2013). *Help seeking in academic settings: Goals, groups, and contexts*. Routledge.
27. Khalil, M. B. (1996). Social support, life management, and pain level for patients with mental illness until death. *Psychology Journal, General Book Authority*, (17) Cairo.
28. Kumar, M. (2018, February 26). Difference between management and administration. *Difference Between Similar Terms and Objects*. Retrieved from http://www.differencebetween.net
29. Le, V. H. (2020). Several factors are compatible in the development and implementation of higher education programs [Conference session]. Proceedings of the conference on Improving the quality of training activities in higher education to meet the AUN-QA requirements of integration and innovation (pp. 3–11). University of Social Sciences and Humanities - Vietnam National University, Ho Chi Minh City.
30. Li, J., Han, X., Wang, W., Sun, G., & Cheng, Z. (2018). How social support influences university students' academic achievement and emotional exhaustion: The mediating role of self-esteem. *Learning and Individual Differences, 61*, 120–126. doi:10.1016/j.lindif.2017.11.016
31. Lotkowski, V. A., Robbins, S. B., & Noeth, R. J. (2004). The Role of Academic and Non-Academic Factors in Improving College Retention. *ACT Policy Report*. American College Testing ACT Inc.
32. Lynch, M. (2016). Philosophies of Education: 3 Types of Student-Centered Philosophies. Retrieved from https://www.theedadvocate.org/philosophies-education-3-types-student-centered-philosophies/
33. McCarthy, J., & Holliday, E. L. (2004). Help-seeking and counseling within a traditional male gender role: An examination from a multicultural perspective. *Journal of Counseling & Development, 82*(1), 25-30.
34. Murphy, R., & Wyness, G. (2023). Testing means-tested aid. *Journal of Labor Economics, 41*(3), 687-727.
35. Newman, R. S. (2000). Social influences on the development of children's adaptive help seeking: The role of parents, teachers, and peers. *Developmental Review, 20*(3), 350-404.
36. Nguyen D. M. H., Bui N. Q., Doan T. M. T. (2020). Integrating educational philosophy and skills of the 21st century according to the Vietnam National Qualifications Framework into higher education programs [Conference session]. Proceedings of the scientific conference on Education quality assurance in the new situation (pp. 150–176). Vietnam National University, Ho Chi Minh City Press.
37. Nguyen H. C., Evers C., Marshall S. (2017). Accreditation of Viet Nam's higher education: Achievements and challenges after a dozen years of development. *Quality Assurance in Education, 25*(4), 475–488.

38. O'Connor, J. S. (2012). Factors that Support or Inhibit Academic Affairs and Student Affairs from Working Collaboratively to Better Support Holistic Students' Experiences: A Phenomenological Study. Retrieved from https://core.ac.uk/download/pdf/190335894.pdf
39. Poyrazli, S., & Lopez, M. D. (2007). An exploratory study of perceived discrimination and homesickness: A comparison of international students and American students. *The Journal of Psychology 141*(3), 263-280.
40. Ramayah, T., Yeap, J. A. L., Soto-Acosta, P., & Lee, J. W. C. (2018). Impact of ICT on quality of learning in higher education. *Studies in Higher Education, 43*(8), 1401-1417.
41. Rayle, A. D., & Chung, K. Y. (2007). Revisiting first-year college students' mattering: Social support, academic stress, and the mattering experience. *Journal of College Student Retention: Research, Theory & Practice, 9*(1), 21–37.
42. Robbins, S., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin, 130*, 261–288.
43. Rosenfeld, L. B., Richman, J. M., & Bowen, G. L. (1998). Supportive communication and school outcomes for academically "at-risk" and other low income middle school students. *Communication Education, 47*, 309–325.
44. Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2008). Gender differences in the relationship between perceived social support and student adjustment during early adolescence. *School Psychology Quarterly, 23*(4), 496–514.
45. Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2010). Relationship between multiple sources of perceived social support and psychological and academic adjustment in early adolescence: Comparisons across gender. *Journal of Youth and Adolescence, 39*(1), 47–61.
46. Sarason, B. R., Sarason, I. G., & Pierce, G. R. (1990). Social support: The sense of acceptance and the role of relationships. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.). *Social support: An interactional view* (pp. 97–128). New York, NY: Willey & Sons.
47. Sullivan, G. M., & Feinn, R. (2012). Using effect size—or why the P value is not enough. *Journal of Graduate Medical Education, 4*(3), 279-282.
48. Suskie L. (2009). *Assessing student learning: A common sense guide* (2nd ed.). Jossey-Bass.
49. Thi Hoai T., Huy N. X., Thuong L. T. (2018). Response level of some undergraduate programmes to Vietnam National Framework for Reference: A case study at Vietnam National University. *VNU Journal of Science: Education Research, 34*(2), 1–10.
50. Thurber, C. A., & Walton, E. A. (2012). Homesickness and adjustment in university students. *Journal Of American College Health, 60*(5), 415-419. doi:10.1080/07448481.2012.673520
51. Tognoli, J. (2003). Leaving home: Homesickness, place attachment, and transition among residential college students. *Journal of College Student Psychotherapy, 18*, 35–48
52. Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. In D. Wendt & C. A. Vlek (Eds.), *Utility, probability, and human decision making* (pp. 141–162). Dordrecht, The Netherlands: Springer
53. Watson, J. C. (2005). College student-athletes' attitudes toward help-seeking behavior and expectations of counseling services. *Journal of College Student Development, 46*(4), 442-449.
54. Yang, P. (2009). The impact of financial aid on student learning. *Research in Education, Tsinghua University, 5*, 101–107.
55.