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Research Article

Correlation between students' perceived parental expectations and students' academic engagement: The intermediary effect of academic self-efficacy

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This article aims at exploring the correlation of student' perceived parental expectations, academic self-efficacy and academic engagement based on the expectancy value theory. Specifically, this study innovatively integrated the parental expectations, academic self-efficacy and academic engagement from students' perspectives into one model and explored the relationships between them. This study adopted quantitative questionnaire survey, including three instruments. This study adopted the Living up to Parental Expectation Inventory, Academic Self-Efficacy Scale, and The Utrecht Work Engagement Scale for Students to assess students' perceived parental expectations, academic self-efficacy, and academic engagement. Quantitative data was analyzed by descriptive statistical technique and referential statistical technique. Results showed that there is a moderate significant positive correlation between student's perceived parental expectations and academic engagement, and similarly, there is a moderate significant positive correlation between academic self-efficacy and academic engagement. The results of hypothesis testing found that hypothesis on the direct significant effects of students' perceived parental expectations on academic engagement has been rejected, indicating the mediation effects of academic self-efficacy.

Keywords: Parental expectation; Academic self-efficacy; Academic engagement

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1. Introduction

Parents' expectations indirectly contribute to students' academic performance. Recent research in educational psychology has concentrated on the variables that moderate the effects of these expectations. Students' academic engagement is a crucial determinant of academic success. Defined as a state of positive well-being characterized by vigor, dedication, and absorption (Anokye Effah & Nkwantabisa, 2022; López-Aguilar et al., 2021), engagement has been somewhat overlooked in past research.

This study aims to bridge this gap by examining how students' perceptions of parental expectations influence their academic self-efficacy and, in turn, their academic engagement. The

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objective is to develop a mechanism model that illustrates the relationship between students' perceived parental expectations and academic engagement.

This research investigates the relationship between students' perceived parental expectations and academic engagement and the mediating roles of academic self-efficacy.

1.1. Students' Perceived Parental Expectations

Expectation refers to waiting and hoping for the future of a person or thing. It is generally based on the partial demand or experience reflecting the objective environment around individuals (Suckert, 2022). One important theory related to expectations is the expectancy-value theory, which is related to academic achievement mainly in mathematics subject (Eccles,1983; Eccles & Wigfield, 2000). Referring to Eccles' Expectation Value Model, parents' attitudes towards students are affected by their beliefs and values, thereby influencing students' academic engagement. Once students show more willing in school activities, they form stronger academic self-efficacy and task values (Lee et al., 2020).

Parents' educational expectations, as defined by certain scholars, encompass parents' assessments of their children's prospective educational accomplishments. These expectations significantly impact students' academic performance (Jiang et al., 2019). Scholars also have found that parents' expectations significantly affect students' psychological and social development (Jeynes, 2024; Pinquart & Ebeling, 2020). The expected value theory presents people' s choice ideas for different actions, that is, the most suitable plan is chosen according to the expected costs and benefits (Vroom, 1964). Parental expectations have a positive impact on students' performance, but there are also many studies presenting that inappropriate parental expectations will bring psychological and behavioral problems to students (Curran & Hill, 2022; Gencoğlu et al., 2018; Ma et al., 2018). Studies have found that when there is a higher expectation gap between university students and their parents, university students' sense of self-worth and adaptability are reduced. Cross-cultural and national studies have shown that one source of academic stress for East Asian students is parental expectations (Rappleye, & Komatsu, 2018). Students' perceived parental expectations and the extent to which they think they have fulfilled those expectations are significantly related to students' mental health. The presence of high expectations from parents is closely linked to an increase in the aspirations and expectations of students themselves, suggesting a significant influence of parental attitudes on student ambition (Almroth et al., 2020). If students' perceived parental expectations are different from their own performance, students' academic self-efficacy will decline (Cross et al., 2019).

Cognitive representations of the-self refer to how an individual evaluates or perceives the attributes that constitute the self (Baumeister et al., 2018). Self-discrepancy theory defined three sub-domains for self-perceptions, which have effects on individuals' motivations and behaviors (Higgins, 1987). The actual self is defined as one's perception of the attributes one possesses, the ideal self is defined as an idealized version of oneself, including one's desires, and finally the supposed self represents the version of oneself one feels obligated to be. A sense of responsibility or obligation (Higgins, 1987). Self-discrepancy theory postulates that perceived differences between the actual-self and the ideal-self (actual-ideal difference) causes emotional distress (Higgins, 1987).

1.2. Academic Engagement

Engagement, as described by Schaufeli et al. (2002), refers to a state of mind associated to studying that is both rewarding and beneficial. It is characterized by three dimensions: absorption, vitality, and dedication. The academic engagement scale was transformed by Schaufeli scholars based on the work engagement scale, which includes vitality, dedication and concentration (Robijn et al., 2020; Schaufeli et al., 2002). Academic engagement is an important factor to evaluate and predict students' academic performance, and researchers use it as a method to improve students' mood, enhance students' motivation, enhance students' participation in school activities, improve

students' learning goal achievement, and understand students' positive development (Datu & Buenconsejo, 2021; Hughes & Cao, 2018; Shih, 2021;).

As for the definition of the concept of academic engagement, the researcher prefers this definition, and defines academic engagement as students can always be engaged in learning in a continuous and full state full of positive emotions. The concept of academic engagement means the positive, fulfilling state presented by vigor, dedication, and absorption (Carmona-Halty et al., 2021; Schaufeli, Salanova et al., 2002). The concept of academic engagement was originally used only in the work context, but in the last 15 years of research, the concept of engagement has been extended to the academic context (Gutierrez et al., 2018; Perkmann et al., 2021). Students' learning activities have goals and structure similar to work tasks. In students' learning activities, learning engagement also presents three dimensions. Vigor refers to a student's energy in learning activities, willingness to put in effort, and attitudes towards learning difficulties. Dedication refers to the sense of meaning and spiritual conviction felt in learning activities. Absorption refers to the concentration of attention in learning activities (Carmona-Halty et al., 2021; Schaufeli, Salanova et al., 2002).

Different studies have shown that students who actively participate in learning activities are better able to handle the pressure in learning and persist in learning activities (Agonács et al., 2020; Álvarez-Pérez et al., 2021; Carmona-Halty et al., 2019). Academic engagement is mainly used to define the state of students' active participation in learning activities and learning processes and is directly related to good academic performance (Chi et al., 2023; Sandoval-munoz et al., 2018). This state is persistent and closely related to the behavior of striving for academic achievement (Carmona-Halty et al., 2019). In terms of the relationship between Schaufeli's three factor model on academic engagement and students' academic performance, there exist several studies on the concept. Studies show there is a positive influence on students' academic performances caused by vigor, dedication, and absorption separately and as a whole structure (Pan, 2022; Pan et al., 2023).

1.3. Academic Self-Efficacy

Under social cognitive theory, a person's thinking process and experience are self-evaluated through self-reflection, which enables them to evaluate and change their environment and social system (Bandura, 1989). This self-evaluation includes the recognition of self-efficacy. Bandura's theory of self-efficacy divides expectations of expectation and reinforcement into efficacy expectations and outcome expectations. Performance expectation is defined as the behavior of individuals regarding their ability to successfully predict a certain outcome. That is, when a person is confident that he can successfully complete a task, he will try to complete it. Outcome expectation is the ability to predict whether a particular action will lead to a particular outcome. According to Bandura, the perceived expectation of efficacy can be called self-efficacy, which refers to whether a person can perform an activity before effectively making subjective judgments about an action (Bandura, 1997). Self-efficacy plays an important role in the causal relationship of individual behavior. It affects individual thinking, emotion, and behavior, and is the basis of individual motivation and achievement. Therefore, this paper focuses on exploring whether parental expectations of students have an impact on students' academic self-efficacy. Based on this theory, it is hoped that parents can consciously observe whether their children can make objective evaluations of their own abilities and judge whether the self-reference standards set by individuals are appropriate.

Academic self-efficacy refers to students' personal judgment of their educational performance ability in the educational scene, which is closely related to students' academic performance and learning process (Bandura, 1986, 1997; Khan, 2023; Zimmerman, 1995). Studies show that when students have stronger confidence in their studies, they will mobilize more learning motivation to overcome difficulties (Al Mohazie, 2018; Urhahne & Wijnia, 2023; Yokoyama, 2019).

In the theory of self-efficacy, an important part is about the impact of self-efficacy expectation on individual behavior. Self-efficacy affects a range of behavioral processes, including behavioral

intention, planning, initiating action and sustaining action. In this series of processes, self-efficacy has the greatest impact on behavioral intention and plan (Code, 2020; Kumar et al., 2020). The researchers' analysis of self-efficacy and its influence on individual behavior shows that there is a need to study the correlation between behavior change and self-efficacy. In the field of physical rehabilitation, self-efficacy expectations also play an important role in the development of intervention programs (Selzler et al., 2020). Some intervention programs adjusted participants' behavior by using self-efficacy as a mediating variable for changing behavior.

1.4. Present Study

Parental expectations for students include both short-term expectations and long-term expectations. Short-term expectations mean parents' expectations on students' learning results for the next coming exam or the final learning outcomes of the current academic year. Long-term expectations are mainly focus on the eventual academic achievements for a certain completion of degree (Jeynes, 2024; Pinquart & Ebeling, 2020). Some researchers defined parental expectations as parents' expectations of students' future academic performance, which mainly include parents' expectations of students' future academic performance and students' academic performance in school (Jeynes, 2024; Jiang et al., 2019).

In this study, the researcher defined students' perceptions on parental expectations as students' perceived expectations of their parents regarding their universities, majors, and academic performances for three aspects using the Living up to Parental Expectation Inventory [LPEI] (Wang & Heppner, 2002). Perceived Parental Expectation [PPE] is students' current perceived expectations from their parents. Perceived Self-Performance [PSP] is whether students think they are meeting their parents' educational expectations. The living up to parental expectations [LPE] is the difference between the degree to which students think they have achieved their parents' expectations and the degree to which students perceive their parental expectations.

When students doubt their learning abilities, this is indicative of low academic self-efficacy, characterized by minimal effort and passive goal setting. The deterioration of students' cognitive capacity and drive to learn has a detrimental effect on their academic performance in college, ultimately impacting their long-term academic and career prospects (Urhahne & Wijnia, 2023).

Academic self-efficacy is integral to students' attitudes and behaviors in learning activities and educational settings. This study focuses on academic self-efficacy as a crucial determinant of students' academic engagement and investigates the relationship between these two variables. For the purposes of this research, academic self-efficacy is defined following Chemers et al. (2001) as students' belief in their ability to successfully execute specific academic tasks, such as task scheduling, note-taking, test preparation, and the execution of research and writing assignments (Chemers et al., 2001).

The concept of academic engagement means the positive, fulfilling state presented by vigor, dedication, and absorption in educational context (Schaufeli, Martinez et al., 2002). Originally applied in the workplace, this concept later gained widespread use in educational settings, leading to the development of academic engagement. Student learning activities, like work tasks, are goal-oriented and structured. Accordingly, academic engagement in student learning also manifests in three distinct dimensions. Vigor refers to a student's energy in learning activities, willingness to make efforts, and attitudes towards learning difficulties. Dedication refers to the sense of meaning and spiritual conviction felt in learning activities. Absorption refers to the concentration of attention in learning activities (Schaufeli, Martinez et al., 2002). In this study, academic engagement is characterized by vigor, absorption, and dedication, following the three dimensions outlined in Schaufeli's model. Academic engagement in this study is defined as an active, engaged, and energetic state in learning and education context (Schaufeli, Martinez et al., 2002).

The main aim of this study is to explore the relationship between parental expectations and university students' academic engagement. Therefore, this study investigates students' perceptions

on parental expectations, academic self-efficacy, and university students' academic engagement. The research set out to test the following hypotheses:

$H_0$1: There is no significant statistical relationship between students' perceived parental expectations [SPPE] and academic self-efficacy [ASE].

$H_0$2: There is no significant statistical relationship between ASE and academic engagement [AE].

$H_0$3: There is no mediation effect of ASE between SPPE and AE.

This research formulates the research problem based on issues and theoretical research on SPPE, students' ASE, and students' AE:

RQ1) What is the relationship between SPPE and AE among the undergraduates?

RQ2) What is the relationship between ASE and AE among the undergraduates?

RQ3) Is there a mediation effect of ASE between SPPE and AE?

2. Method

2.1. Research Model

In this study, students' perceived parental expectations, academic self-efficacy and students' academic engagement were placed into Smart PLS to obtain the correlation between the three variables. The Smart PLS 4.0 was used to test the proposed mediation effect of academic self-efficacy on the relationship between students' perceived parental expectations and academic engagement.

2.2. Participant and Data Collection Process

Students from a comprehensive, open-enrollment institution in Shandong Province, China, participated in this study. The population referred to freshmen who began their undergraduate studies in September 2022. The chosen students were required to remain on campus and participate in the online survey with the administration in order to undertake the writing experiments.

First-year freshman who had recently finished their first semester of study made up the study's participants. These pupils have recently started new academic level and surroundings and are in the developmental stage of transitioning into adulthood. As a result of its ability to examine how students participate in learning in a new academic setting when they are affected by parental expectations in late adolescence and early adulthood.

Seventy-five of all students that were eligible for this study participated in the pilot trial in March 2023. The following actual study was carried out in the end of March 2023. The main study omitted every participant from the pilot trial. The actual study included the 345 students.

The current study employed a purposive sampling technique to select participants based on maximum variation sampling (Creswell, 2021). The nature of maximum variation sampling is to look at a topic from all available angles to gain a better understanding. In this study, the sample was selected based on three aspects. Participants were students who reported that they did not have high academic engagement, who performed well in their studies, and students who reported that they wanted to discuss parental expectations (Campbell et al., 2020).

2.3. Data Collection Tools

Through a comprehensive review of existing literature, the research tools needed for this study are preliminarily formed. This study mainly collects the required data through questionnaire survey, and the required questionnaires.

2.3.1. The Living up to Parental Expectation Inventory

The Living up to Parental Expectation Inventory [LPEI] was designed by Wang and Heppner (2002), including nine items. This study uses the original questionnaire and does the back-to-back translation for the original English version to Chinese.

2.3.2. The Utrecht Work Engagement Scale for Students

The Utrecht Work Engagement Scale for Students [UWES-9S] is used in this study (Schaufeli et al., 2006), including nine items. The researcher uses the original Chinese version questionnaire.

2.3.3. Academic Self-Efficacy Scale

Academic Self-Efficacy Scale [ASE] was first proposed by Chemers et al. (2001), including 8 items. The researchers use the original questionnaire and do the back-to-back translation for the original English version to Chinese. Table 1 presents the three scales used in this study, as well as specific details of each scale. The authors provide two examples for each scale in Table 1.

Table 1
Scales Used in This Study

Instruments and Examples Items	*No of Questions*
The Living up to Parental Expectation Inventory (LPEI) (Wang & Heppner, 2002)	9
Parents expect my academic performance to make them proud.	
Parents expect me to have excellent academic performance.	
The Utrecht Work Engagement Scale for Students (UWES-9S) (Schaufeli, Salanova et al., 2002; Carmona-Halty et al., 2019)	9
I feel energetic and capable when I'm studying or going to class.	
I am immersed in my studies.	
Academic Self-Efficacy Scale (ASE) (Chemers et al., 2001)	8
I know how to schedule my time to accomplish my tasks.	
I usually do very well in school and at academic tasks.	

2.4. Data Analysis

The study conducts structural equation modeling [SEM] to test three hypotheses between independent variable, mediating variable and dependent variables showed in conceptual framework. Smart PLS 4 are used for data analysis. In statistics, the commonly used method of correlation analysis is Pearson product-moment correlation for continuous data. Pearson correlation coefficient (r) indicates the closeness of the relationship between the two variables, whose values are between -1 and +1. The higher the absolute value of r, the higher the correlation between the two variables; the smaller the absolute value of r, the lower the correlation between the two variables. The use of the general guidelines provided by Creswell (2015) determined whether the size of the coefficient provided meaningful information. An absolute value of r =.66 to .85 was considered very good, with strong prediction resulting from one variable to another. A value between .35 and .65 means a moderate correlation from one variable to another. An absolute value of r =.20 to .35 indicates a slight relationship. Scholars have translated the correlation coefficient into descriptors like "low," "moderate," or "high" relationship (Mukaka, 2012; Overholser & Sowinski, 2008) as follows: a value of r =.00-.39 was considered of low correlation, a value between .40-.70 mean a moderate correlation, a value between .71-1.00 was a high correlation.

3. Results

3.1. Descriptive Statistics

The level of students' perceived parental expectations [SPPE] was examined using the Living up to Parental Expectation Inventory (Wang & Heppner, 2002). The level of students' academic self-efficacy was examined using Academic Self-Efficacy Scale (Chemers et al., 2001). The level of students' academic engagement was examined using The Utrecht Work Engagement Scale for Students (Schaufeli, Salanova et al., 2002; Carmona-Halty et al., 2019). The researcher uses the original Chinese version questionnaire.

Students' responses for each item are based on a five-point Likert scale, in which 1, 2, 3, 4, and 5 respectively mean "strongly disagree, disagree, neutral, agree, strongly agree". The five-point Likert scale was used to measure the variables, and mean value and standard deviation were used to reflect the level of variables. Omari (2018) suggested that the mean values in different ranges represented corresponding levels (high, moderate and low), which was shown in Table 2.

Table 2
Different Level of Variables and Their Dimensions According to Mean Value

Mean Value	*1.00-2.33*	*2.34-3.67*	*3.68-5.00*
Level	Low	Moderate	High

As demonstrated in the Table 3, the mean scores for students' perceived parental expectations (SPPE), academic self-efficacy (ASE), and academic engagement (AE) are 3.62, 3.51 and 3.54. The corresponding standard deviation for the three variables is: 0.93, 0.92 and 0.94.

Table 3
Descriptive Statistics of Study Variables of First-year Undergraduate Students (N=345)

Variables	*N*	*Mean*	*SD*
SPPE	345	3.62	0.93
ASE	345	3.51	0.92
AE	345	3.54	0.94

Note. SPPE: students' perceived parental expectations; ASE: academic self-efficacy; AE: academic engagement; N: study sample.

3.2. RQ1: What is the Relationship between SPPE and AE among the Undergraduates?

The research question 1 of this study is to explore the relationship between SPPE and AE among undergraduates. Correlation analysis is a statistical analysis method used to analyze the linear relationship between two variables and compute their association. In this section, the null hypothesis to be tested in Pearson's correlation is:

$H_0$1: There is no significant statistical relationship between SPPE and AE.

Table 4
Pearson Product-moment Correlation between SPPE and AE (ρ=0)

Correlations			
		SPPE	AE
SPPE	Pearson Correlation	1	.754**
	Sig. (2-tailed)		0
	N	345	345
AE	Pearson Correlation	.754**	1
	Sig. (2-tailed)	0	
	N	345	345

Note. SPPE: Students' perceived parental expectations; AE: Academic engagement; **Correlation is significant at the .01 level (2-tailed).

As shown in Table 4, the correlation coefficient between SPPE and AE is $r = 0.754$ with a significant level of .000, which shows that there is a moderate significant positive correlation between SPPE and AE. Consequently, the null hypothesis is rejected.

3.3. RQ2: What is the Relationship between ASE and AE among the Undergraduates?

The research question seven of this study is to explore the relationship between ASE and AE among undergraduates. Like the previous research question, correlation analysis is a statistical analysis method used to analyze the linear relationship between two variables and compute their association. The null hypothesis to be tested in Pearson's correlation is:

$H_0$2: There is no significant statistical relationship between ASE and AE.

Table 5
Pearson Product-moment Correlation between ASE and AE (ρ=0)

Correlations

		ASE	AE
ASE	Pearson Correlation	1	.951**
	Sig. (2-tailed)		0
	N	345	345
AE	Pearson Correlation	.951**	1
	Sig. (2-tailed)	0	
	N	345	345

Note. EI: Educational identity; ASE: academic self-efficacy; ** Correlation is significant at the .01 level (2-tailed).

As shown in Table 5, the correlation coefficient between ASE and AE is r= 0.951 with a significant level of 0.000, which shows that there is a moderate significant positive correlation between ASE and AE. Consequently, the null hypothesis is rejected.

3.4 RQ3: Is there a Mediation Effect of Academic Self-efficacy between Students' Perceived Parental Expectations and Academic Engagement?

From the mediation effect model, we can see that we need at least three steps to complete the test of the mediation effect. The first step is to test whether the regression equation of SPPE on AE is statistically significant. The second step is to test whether the regression equation of SPPE to ASE has statistical significance. The third step is to test whether the regression equation of SPPE and ASE on AE is statistically significant. Figure 1 and Figure 2 present the mediation effect model of SPPE and AE, and mediation effect model of SPPE, ASE and AE, respectively.

$H_0$5: There is no mediation effect of academic self-efficacy between students' perceived parental expectations and academic engagement.

Figure 1
Mediation Effect Model of SPPE and AE

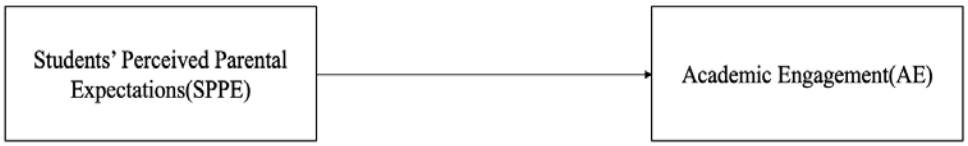
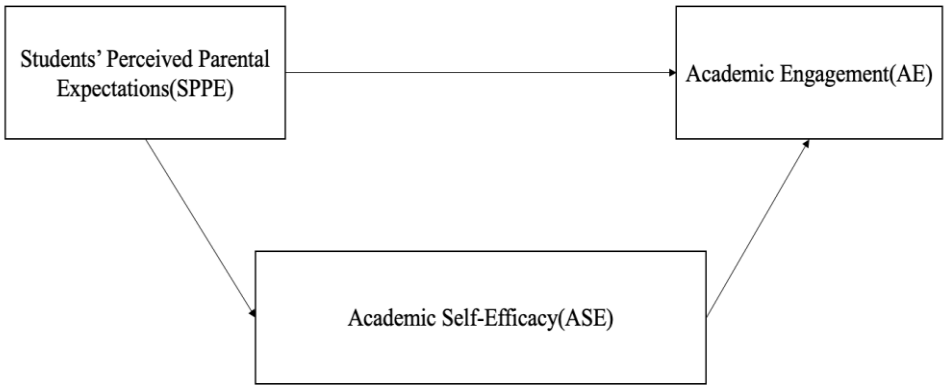


Figure 2
Mediation Effect Model of SPPE, ASE and AE



The first step is to test whether the regression equation of SPPE on AE is statistically significant. Table 6 shows the results of a regression model with SPPE as a predictor of AE.

Table 6
Model Summary of SPPE and AE

Model Summary				
Model	*R*	*R Square*	*Adjusted R Square*	*SEE*
1	.754[a]	.569	.567	0.616

Note. [a]Predictors: (Constant), SPPE; SEE: Standart error of the estimane.

As shown in the model summary of Table 6, the R Square is 0.754, which means that SPPE could explain 75.4% variance of AE. Table 6 is the Model Summary of SPPE and AE. The model has an R-value of 0.754, indicating a strong correlation between SPPE and AE. The R-squared value of 0.569 suggests that approximately 56.9% of the variance in AE can be explained by SPPE, which is quite substantial. Table 7 is the ANOVA (Analysis of Variance) of SPPE and AE.

Table 7
ANOVA of SPPE and AE

ANOVA[a]						
Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	Regression	171.556	1	171.556	451.949	.000
	Residual	130.200	343	0.380		
	Total	301.755	344			

Note. [a]Dependent Variable: AE. b Predictors: (Constant), SPPE.

Table 7 tests the overall significance of the regression model. The *F*-statistic is 451.949, with a significant *p*-value (Sig.) of .000, indicating that the regression model significantly predicts AE from SPPE. Table 8 is Coefficients of SPPE and AE, providing details of the regression equation.

Table 8
Coefficients of SPPE and AE

Coefficients[a]						
Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	SE	Beta		
1	(Constant)	0.785	0.134		5.875	.00
	SPPE	0.760	0.036	0.754	21.259	.00

Note. [a]Dependent Variable: AE.

As can be seen from the Table 8, the constant (intercept) is 0.785 with a standard error of 0.134, and it is statistically significant (t = 5.875, p = .000). The coefficient for SPPE is 0.760 with a standard error of 0.036, also showing strong statistical significance (t = 21.259, p = .000). The standardized beta coefficient of 0.754 confirms SPPE as a strong predictor of AE. F(df=1)=451.949 and the p =.000<.05. AE=0.785+0.760*SPPE. All data showed the regression equation of SPPE on AE is statistically significant.

The second step is to test whether the regression equation of SPPE to ASE has statistical significance. Tables 9, 10, and 11 detail the statistical analysis for a regression model where SPPE is used to predict ASE. Table 9 shows the Model Summary of APPE and ASE.

Table 9
Model Summary of SPPE and ASE

Model Summary[b]				
Model	*R*	*R Square*	*Adjusted R Square*	*SE*
1	.757[a]	0.574	0.572	0.602

Note. [a]Predictors: (Constant), SPPE; [b]Dependent Variable: ASE; SEE: Standart error of the estimane.

Table 9 shows that the model has a high correlation coefficient (R = 0.757), indicating a strong linear relationship between SPPE and ASE. The R-squared value is 0.574, meaning that approximately 57.4% of the variance in ASE is explained by SPPE, which suggests a strong model fit. Table 10 is the ANOVA of SPPE and ASE results.

Table 10
ANOVA of SPPE and ASE

ANOVA[a]						
Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	Regression	167.200	1	167.200	461.579	.000
	Residual	124.247	343	0.362		
	Total	291.446	344			

Note. [a]Dependent Variable: ASE. [b]Predictors: (Constant), SPPE.

As summarized in Table 10, the F-statistic is 461.579, with a highly significant *p*-value (Sig. = .000), strongly indicating that the model with SPPE significantly predicts ASE. Table 11 shows the coefficients of SPPE and ASE, providing the coefficients of the regression equation.

Table 11
Coefficients of SPPE and ASE

Coefficients[a]						
Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	SE	Beta		
1	(Constant)	0.792	0.131		6.067	.00
	SPPE	0.750	0.035	0.757	21.484	.00

Note. [a]Dependent Variable: ASE.

Table 11 shows the coefficient for SPPE is 0.750 with a standard error of 0.035, and a standardized beta coefficient of 0.757, which also shows strong statistical significance (t = 21.484, p = .000), reinforcing SPPE as a powerful predictor of ASE. In summary, as shown in the model summary of Table 9, 75.7% of the variance for ASE explained by SPPE. *F*(df=1)=461.579, the *p* =.000<.05, and ASE=0.792+0.750*SPPE. All data showed the regression equation of SPPE on ASE is statistically significant.

The third step is to test whether the regression equation of SPPE and ASE on AE is statistically significant.

Table 12
Coefficients of SPPE, ASE and AE

Coefficients[a]						
Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	Std. Error	Beta		
1	(Constant)	0.067	0.065		1.026	.306
	SPPE	0.080	0.025	0.079	3.133	.002
	ASE	0.907	0.026	0.891	35.268	.00

Note. [a]Dependent Variable: AE.

As shown in the Table 12, the coefficient of SPPE on AE is 0.08 and the significance is .002 (<.05), which is significant. The regression coefficients for a model predicting AE from both SPPE and ASE. The coefficient for SPPE is 0.08 with a significant p-value (*p* =.002), indicating a significant direct effect of SPPE on AE. The coefficient for ASE is much larger (0.907) and highly significant (*p* = .000), suggesting that ASE is a strong predictor of AE. Given that both SPPE and ASE are significant predictors of AE, this suggests a partial mediation model where ASE partially mediates the relationship between SPPE and AE. The total effect value is 0.76, the direct effect 0.08, the mediation effect value is 0.68, accounting for 89.5 % of the total effect.

4. Discussion and Conclusion

4.1. Relationship between Students' Perceived Parental Expectations (SPPE) and Academic Engagement (AE)

According to the research finding, the correlation coefficient between SPPE and AE is r= .754 with

a significant level of 0.000, which shows that there is a moderate significant positive correlation between SPPE and AE. However, in the multiple regression analysis, results showed that SPPE, with a p-value of .867(>.05), is not a significant predictor of AE.

A correlation is a statistical indicator of the relationship between variables. Causation means that changes in one variable brings about changes in the other; there is a cause-and-effect relationship between variables. Based on the quantitative findings, results showed that students' perceived parental expectations and academic engagement are correlated with each other, while there is no causal link between them since students' perceived parental expectations cannot show direct predictive effect on academic engagement.

In a study on Chinese adolescents' academic engagement, researchers found that both paternal parenting style and maternal parenting style could significantly contribute to adolescents' academic engagement (Wang et al., 2022). In this study, although the parental expectations are not examined as a separate variable, while the parenting styles involves different kinds of parental expectations on students. Findings could provide evidence that parental expectations have associations with students' academic engagement while the predictive effect cannot be supported directly. In another study, researchers conducted surveys on the predictors to primary school students' academic engagement. Results indicated that parental involvement, high-quality parent-child relationships, and parental support are all predictors to students' academic engagement, while only clear expectations contributed to perceived competence (Gaxiola Romero et al., 2022).

In total, previous studies provided evidence on students' perceived parental expectations and parental expectations' correlation with students' academic engagement, while the predictive effect of parental expectation on academic engagement are not proved. Findings from previous literatures and the current study are consistent.

4.2. Relationship between Academic Self-Efficacy and Academic Engagement

In this study, findings showed that students' academic self-efficacy had significant positive predictive effect on students' academic engagement, which means that when students had stronger beliefs that they would perform well academically, they would commit deeper in their current studies. Academic self-efficacy refers to a person's belief in his or her ability to successfully complete academic tasks and learn new information. It also refers to a person's belief in his or her ability to successfully achieve academic goals that they have set for themselves. Engagement is defined as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption" (Schaufeli, Martinez et al., 2002). Student engagement is correlated with multiple measures of student success.

Previous literatures provided evidence on this argument. In a study targeting on the same population with my study which is university students, researchers found that students' academic self-efficacy didn't show the significant direct effect on students' academic performances as a predictor. Furthermore, researcher tested the effects of academic self-efficacy on students' academic engagement, as well as the mediation effect of academic self-efficacy on the relationship between autonomy support and positive emotions on performance in a second model (Benlahcene et al., 2024; Qi et al., 2023).

Conclusions of other literatures were also in consistent with the main findings of my research that students' self-evaluated academic self-efficacy showed significant effect on students' engagement. In a study, researchers examined whether students' perceptions of computer self-efficacy impact student engagement and group satisfaction in online business courses. Findings indicated that computer self-efficacy leads to student engagement, and further that student engagement influences group satisfaction (Wolverton et al., 2020). Similarly, academic self-efficacy in the computer-related learning context were also proved to have significant effect on students' academic engagement in the online learning (Azizi et al., 2022). Academic self-efficacy in computers specifically refers to the increase in computer-related experience and increased familiarity with technology (Goldman & Bell, 2022). Specific to the different dimensions of student

participation, the researchers found that computer-related academic self-efficacy in online learning context is positively correlated with cognitive and affective dimensions of student engagement (Salas-Pilco et al., 2022). Furthermore, learning engagement has been shown to be positively correlated with computer self-efficacy. Research has demonstrated that higher levels of computer self-efficacy are associated with higher levels of information-related academic engagement (Hollister et al., 2022).

Additional research has focused on the mediating role of academic self-efficacy in different pathways with academic participation as the dependent variable. In these pathways, the impact of academic self-efficacy on students' academic engagement is also demonstrated. In a study on the academic participation of Chinese adolescents, researchers found that academic self-efficacy partially moderated the positive relationship between students' resilience and academic participation (Yang et al., 2022). In another longitudinal study, researchers investigated the influence of first-year undergraduate students' previous learning experience on their current academic engagement. The results showed that psychological capital and academic self-efficacy played a mediating role between students' past learning experience and current learning engagement (Chen et al., 2022).

4.3. Mediation Effect of Academic Self-Efficacy (ASE)

Self-efficacy, defined as individuals' belief in their ability to control their own functioning and the events that affect their lives (Bandura, 1977), may also play an important role in the relationship between self-difference and psychopathology. In this study, the researcher found that students' academic self-efficacy played a mediation effect on the relationship between students' perceived parental expectations and academic engagement. Students' perceived parental expectations in this study consists of students' perceptions on their own performance, their perceived parental expectations and the differences between these two parts, which means the discrepancies between parents' perceived ought-to performances and students' perceived actual performances.

Previous literatures provided supporting evidence on the mediation effects of academic self-efficacy on the relationships between discrepancies between actual-self with ideal-self and students' performances and mental states. In a study from the Department of Psychiatry at the University of Cambridge, experts explored the relationship between the difference between the actual self and the expected self and neurosis in more depth. The unique part was that self-efficacy was included as a mediating variable in the model (Schlechter et al., 2022). Self-difference theory suggests that larger differences between actual and ideal selves are associated with dysphoria, while larger differences between actual and supposed selves are associated with anxiety. Research has shown that both self-differences are positively associated with depression, anxiety, and negatively associated with well-being, self-efficacy, tolerance, and adjustment. Self-efficacy partly explains the relationship between self-difference and outcomes.

In this study, academic self-efficacy exerts partial mediation effect on the relationship between students' perceived parental expectations and students' academic engagement. The percentage of the total effect of students' perceived parental expectations on academic engagement that is mediated by academic self-efficacy is approximately 89.47%. This indicates that a very large portion of the relationship between SPPE and AE is explained by the influence of SPPE on ASE, which in turn affects AE. This is basically consistent with the mediating effect of academic self-efficacy between students' perceived parental factors and students' academic engagement presented in most past studies. Various studies in the literature supporting the mediation effects of academic self-efficacy on the relationship between some other variables such as autonomy support from teachers or parents and students' perceptions of feedback with academic engagement and success. For instance, in a study by Gutiérrez et al. (2018) on university students in their adulthood (with a mean age of 26.99 years) from Dominican Republic, researchers explored the full mediation effects of academic self-efficacy on the relationship between students' perceived autonomy support from teachers and academic achievement. The difference between this study and the

previous study is that students' school engagement was also investigated as another mediating variable in this study. Another study with the same sample age as the current study focused on first-year college students. In this study, findings proved that academic self-efficacy mediates relationships between students' perceptions of feedback and their academic achievements (Adams et al., 2020). In more details, first, there is a positive correlation between the external feedback perceived by students and their academic self-efficacy. Second, there is a positive correlation between students' belief that they can achieve ideal results in a particular subject and their academic performance. Among them, academic self-efficacy mediates the relationship between students' perceptions of feedback and academic achievement (Adams et al., 2020). Academic self-efficacy significantly mediated the correlation between family functioning and learning engagement, indicating its role in mediating the impact of parental expectations on students' academic engagement in research on junior high school students in rural China (Qi et al., 2023). In another study, results indicated that parental involvement had significant effects on adolescent academic achievement, with academic self-efficacy partially mediating the relation between parental involvement and academic achievement (Zhao et al., 2021). Students' academic self-efficacy mediated parent and teacher support and youth academic engagement, highlighting its role in mediating the impact of parental support on academic engagement (Abaszadeh et al., 2024; Benlahcene et al., 2024; Qi et al., 2023). Adams draws on the findings that academic self-efficacy mediates the association between positive use of feedback and achievement, suggesting a role for students' perceived academic competence in effectively engaging with feedback (Adams et al., 2020).

5. Limitations

As with any scholarly endeavor, this study is subject to certain limitations that merit discussion. Firstly, considerations regarding the sample selection must be acknowledged, as they bear upon the generalizability of the study's findings. The selected sample size in the current study was less than 500 (75 in the pilot study and 345 in the real study). The modest sample size of this study limits the generalizability of its findings, indicating the need for further research with a larger cohort to validate these results. Secondly, the research setting and potential for researcher bias necessitate examination. In the current study, the research was conducted at a private university where the researcher has served as a counselor for nearly four years. This longstanding service relationship with the institution could potentially impact the researcher's impartiality due to a conflict of interest. It is well-documented that a researcher's objectivity is crucial, and role confusion must be avoided. However, the researcher's intimate familiarity with students can be advantageous, allowing for a nuanced understanding of student mentality and mitigating certain risks, such as imposing psychological stress on participants. To eliminate researcher bias in future studies, it would be advisable to choose research setting where the investigator has no prior affiliations with the stakeholders involved. Lastly, aspects of the research design itself present inherent limitations. Each of these constraints will be explored in detail in the subsequent sections. As a cross-sectional study, this study looked at only one static time period (participants completing their first semester of university studies). In addition, this research only focuses on the perspective of students, and does not explore from the perspective of parents. Another limitation in the current study is the online questionnaire and online interviews for the quantitative and qualitative research parts, which may result in the misunderstandings of some concepts in the questionnaire.

6. Implications

6.1. Practical Implications for Parental Expectations

For the parental expectations part, important ways come from this research focusing on communication and goal alignment. This can support future parent-student relationships, especially with children in early adulthood. The direct implications are that a guideline for parent-

child relationship and students' academic investment and psychological state can be made based on the findings of this study. The first part mainly revolves around the communication between parents and students from the dual perspective of parents and students. The second part revolves around students facing irreconcilable conflicts, one of which is to internalize external expectations as their own goals (Kamanda, 2020). This guideline will provide parents and students with direct and effective theoretical support and practical guidance.

6.2. Practical Implications for Students' Academic Engagement

By exploring the relationship between students' perceived parental expectations, students' educational identity, students' academic self-efficacy and students' academic engagement, this study provided a guiding idea for improving the academic engagement of first-year university students.

Based on the findings of this study, freshmen are already entering early adulthood. Students in this group will still feel the expectations from their parents, which are aimed at academics or future employment. However, students' perceived parental expectations do not directly affect students' academic engagement, and there is no significant predictive effect between these two variables. In this study, the mediating role of students' academic self-efficacy in the relationship between students' perceived parental expectations and students' academic engagement was verified. Therefore, whether it is educators, parents or students themselves, they can increase students' academic engagement in the current major and school according to the mediation effect.

Students' academic self-efficacy in the learning process is also an important factor affecting their academic engagement. Helping students build confidence in their current major is another important task (Schunk & DiBenedetto, 2022). From an educator's perspective, schools and teachers will realize that students' academic engagement is affected by their confidence in their current academic performance. Therefore, educators will adopt more strategies to help students build confidence in their current studies. From the perspective of parents, the impact similar to the previous part is that parents may reflect on and adjust their educational expectations. Parents experiencing education-related anxiety may struggle to effectively manage their expectations surrounding their children (Wu et al., 2022). Parents will become more aware of the impact of their expectations on their children, and some behavioral changes will occur. From the perspective of students, students will better understand their current academic status and the influencing factors of academic engagement and pay more attention to improving their academic input by improving their confidence in the competence of their majors (Sokhanvar et al., 2021).

7. Conclusion

This study is conducted to explore the correlation of student' perceived parental expectations, academic self-efficacy and academic engagement based on the expectancy value theory. Specifically, this study innovatively integrated the parental expectations, academic self-efficacy and academic engagement from students' perspectives into one model and explore the relationships between them.

The research aims to confirm the mediation effects of academic self-efficacy in the relationship between students' perceived parental expectations and academic engagement. The results of hypothesis testing found that hypothesis on the direct significant effects of students' perceived parental expectations on academic engagement has been rejected, indicating the partial mediation effects of academic self-efficacy.

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