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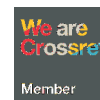
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# Enhancing self-regulated learning: the moderating role of social support in the relationship between authoritative parenting and student autonomy

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## ABSTRACT

This study aims to investigate the influence of authoritative parenting style, social support, and self-regulated learning (SRL) ability in university students. The approach used is quantitative with a post-positivism view and ex post facto method. The research sample consisted of 80 early semester students at UIN Alauddin who were selected using the saturated sample method. Data were collected through a Likert scale-based questionnaire and analysed using SmartPLS version 4.0. The results showed that social support did not have a significant direct influence on SRL, with a coefficient ( ) of 0.000 and a P-Value of 0.999, indicating that social support alone is not enough to improve SRL ability. However, authoritative parenting style had a significant influence on SRL with a coefficient of 0.627 and a P-Value of 0.000, indicating a strong positive relationship. This authoritative parenting style encourages students to be more independent, responsible, and more able to organise their learning independently. The interaction analysis shows that social support acts as a moderator that strengthens the relationship between authoritative parenting style and SRL. At high levels of social support, the positive impact of authoritative parenting style on SRL was greater, whereas at low levels of social support, this relationship weakened. In conclusion, social support strengthens the effectiveness of authoritative parenting style in improving SRL. Therefore, efforts to improve college students' SRL need to integrate adequate social support with a supportive parenting style. These findings provide implications for educational institutions and families in creating an environment that supports the development of students' self-regulation abilities in the early semesters.

## Keywords:

Authoritative parenting  
Self-regulation learning  
Social support  
SMART PLS

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## Introduction

Self-regulation learning (SRL) refers to an individual's ability to independently organise the learning process, including setting goals, monitoring progress, and evaluating outcomes (Theobald, 2021; Yan, 2020). This ability is particularly crucial for early-semester students as they adapt to the academic demands of higher education. The transition from secondary to higher education often requires a greater degree of learning independence, making the development of self-regulation learning a critical area of focus.

One of the factors that influence self-regulation learning is the parenting style applied by parents. Authoritative parenting, characterised by a combination of firm control and high emotional support, is believed to shape children's independent, disciplined and responsible personalities (Febiyanti & Rachmawati, 2021). Students raised with this parenting style tend to have better self-regulation learning skills because they are taught to set boundaries while making decisions independently (Pakpahan & Kustanti, 2020).

According to Lorence et al, (2019) authoritative parenting, characterised by a balance between emotional support and reasonable control, tends to facilitate the internalisation of positive values in children. Children raised by authoritative parents typically develop self-confidence, emotional regulation skills, and the ability to express themselves in a healthy manner. Authoritative parenting during childhood has been shown to promote higher levels of life satisfaction in later stages of life (Lavrič & Naterer, 2020).

The level of care and protection provided by parents is a key factor in fostering strong bonds with their children (Abou Taleb et al., 2024). Parenting styles serve as significant predictors of children's behavior (Alhazmi, 2024). Similarly, Shyny (2017) states that parents play a major role in shaping their children's character, values, and abilities through parenting practices, emotional support, and education. Effective parenting can enhance children's well-being, academic achievement, and social-emotional skills to navigate life challenges.

In addition to parenting styles, the social environment plays an essential role in developing self-regulation learning (SRL) abilities. Social support, whether from family, peers (Zhao et al., 2021), or the academic environment, strengthens learning motivation and fosters self-confidence in students (Poots & Cassidy, 2020). Social support creates a sense of safety and connectedness, encouraging individuals to feel more confident in managing their learning processes (Zahrawati B et al., 2024).

However, the influence of parenting styles on SRL is not always direct. In many cases, this relationship is moderated by external factors such as social support. For instance, students raised with an authoritative parenting style may exhibit better SRL abilities if they also receive adequate social support from their surroundings. Conversely, the absence of sufficient social support can weaken the positive impact of parenting styles on independent learning.

Early-semester students frequently encounter considerable challenges, including adapting to unfamiliar learning methods, meeting heightened academic demands, and managing the pressure to achieve satisfactory results. In such circumstances, self-regulation learning (SRL) emerges as a critical skill for navigating these difficulties. However, the development and effectiveness of SRL can vary significantly, influenced by factors such as parental upbringing and the level of social support available to students.

Effective parenting styles are found to have an important impact on children's developmental outcomes, such as academic achievement, social skills, and well-being (Cobb-Clark et al., 2019). Authoritative parenting has a significant relationship with self-regulation learning. However, most of these studies have not examined how social support can moderate the relationship. Understanding the interaction between family and social environment factors is important to get a more holistic picture of the development of self-regulated learning skills in university students.

Research shows that authoritative parenting positively influences academic achievement and self-regulated learning (SRL) in students. Authoritative parenting is associated with higher SRL, academic achievement orientation and self-efficacy compared to permissive parenting (Hassan et al., 2022; Kong & Yasmin, 2022). These parenting styles directly and indirectly affect academic achievement, partly mediated by self-efficacy and intention to get good grades (Hayek et al., 2022). SRL practices and interventions can reduce the impact of academic challenges and psychological stress on academic outcomes, especially for first-year students (Hadwin et al., 2022). In addition, parental self-efficacy mediates the relationship between parenting style and child learning outcomes (Kong & Yasmin, 2022). These findings suggest that promoting authoritative parenting and SRL strategies may improve

students' academic performance and resilience, especially in challenging learning environments such as those experienced during the COVID-19 pandemic (Hadwin et al., 2022; Hayek et al., 2022).

This study is also relevant within the context of higher education in Indonesia, where students often come from diverse cultural and social backgrounds that influence the parenting styles and social support they receive. In Indonesia's collectivist society, the role of family and community is pivotal in shaping individual character and capabilities, including self-regulation learning (SRL).

This study aims to explain the effect of authoritative parenting on self-regulation learning by considering the role of social support as a moderating variable. Thus, the results of this study are expected to contribute to the development of more effective learning strategies, both at the family level and educational institutions. Through this research, it is expected to find new insights into how authoritative parenting and social support interact with each other in shaping students' self-regulation learning. The results can be the basis for developing a holistic coaching programme to support early semester students in facing academic and social challenges.

## Methods

The research uses a quantitative approach with a post-positivism view (Creswell & Creswell, 2018). Our research is explanatory-predictive research whose main purpose is to investigate statistical inference from path coefficients, effect sizes, model predictive performance, and prediction errors (Henseler, 2018). The research sample is the first semester students of UIN Alauddin as many as 80 because the population is not too large, the authors use the saturated sample method where all populations are used as samples PLS-SEM is a very flexible method and does not experience identification problems when using small samples. With this technique, we can still achieve a high level of statistical power, so the results remain valid even though the sample size is not too large (Hair et al., 2021). The collection process was carried out using a questionnaire with a Likert scale of 1-5 (Kata et al., 2024; Mumu et al., 2022), the variables of parental parenting, self-regulation learning and social support, using categories (1 = Strongly Disagree, 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree). The following is the operational definition of variables and indicators used as measuring instruments in the study.

**Table 1.** Measurement Variables and Indicators

Variable Definition	Source	Dimension
Parenting is the behaviour and strategy of educating children that includes aspects of nurturing, guidance, and character building according to family values.	(Baumrind, 1966; Carapito et al., 2020; Robinson et al., 1995)	1. Rational and Democratic Direction 2. Providing Support and Trust 3. Firm but Not Rigid Control 4. Balance between Autonomy and Control
Self-regulated learning, the ability of individuals to organise their learning process independently, including setting goals, monitoring progress, evaluating results, and managing motivation and learning strategies.	(Toering et al., 2012) (Velayutham et al., 2011)	1. Planning 2. Self-monitoring 3. Evaluation 4. Reflection
Social Support verbal or nonverbal assistance from the social environment that provides emotional benefits, a sense of calm, being loved, valued, and confident through trusted relationships..	(Uchino, 2004; Zimet et al., 1988, 1990)	1. Emotional or esteem support 2. Tangible or instrumental support 3. Informational support 4. Companionship support

The collected data was analysed with Smart PLS software version 4.0 with the following steps. Testing the outer model is a process that includes determining how each indicator is related to the

latent variable they represent. In other words, this is the step where we explain how the indicators describe or measure the latent variable, which is in the study (Gio, 2022; Yamin, 2023).

Convergent Validity is measured by looking at the factor loading value between the latent variable and its indicators. The expected factor loading value in convergent validity is greater than 0.7 (Hair et al., 2021; Vinzi et al., 2010). Discriminant Validity is measured by comparing the factor loading values between the desired constructs to be distinguished from other constructs in the study. To determine whether discriminant validity is adequate, we need to look at the factor loading values. The factor loading value on the desired construct must be greater than the factor loading value on other constructs. Average Variance Extracted (AVE). assesses the extent to which the indicators in a construct are able to explain the variability of the construct. AVE measures how well the indicators measure or reflect the construct with a value > 0.5 (Hair et al., 2019).

Composite Reliability. a measure used to measure the extent to which a construct in research has a high level of reliability. Data that has a composite reliability (CR) greater than 0.7 can be considered to have high reliability. This indicates that the construct is measured well and consistently by its indicators (Chin et al., 2020; Sarstedt et al., 2022).

Measurement of the structural model (inner model) is a test of the relationship between latent variables or constructs in the research model. In this stage, statistical analysis is carried out to understand and test the extent to which the conceptual model that has been built to test the research hypothesis and see the extent to which the relationship between latent variables is significant and in accordance with the proposed theory (Hair et al., 2021) Research hypothesis testing is carried out by bootstrapping if the t-statistic value > 1.96 and p value < 0.05 then it shows a significant influence between variables with a 95% confidence interval path coefficient. to explain the effect of structural values, the f square value is used with categories, low (0.02), medium (0.15) and high (0.35) influence (Hair et al., 2021). To see the moderating effect, the size of the effect is used, small (0.005), medium (0.01), large (0.025) (Kenny, 2018).

## Results and Discussion

### Measurement Model Analysis

The measurement model evaluation aims to assess the reliability and validity of the constructs and indicators used in order to ensure that the measuring instrument accurately represents the latent variables. The following is a detailed analysis based on the data on Figure 1.

Based on the table 2 presented, the analysis results show that all variables have good validity and reliability. For the Social Support variable, the loading factor values of indicators DS1 to DS4 range from 0.767 to 0.793, which indicates that these indicators have a significant contribution to the formation of this variable. The Average Variance Extracted (AVE) value of 0.611 indicates that more than 60% of the indicator variance can be explained by the construct. In addition, the Cronbach's Alpha value of 0.789 and Composite Reliability of 0.863 indicate strong reliability. In the authoritative parenting style variable, the loading factor value of the indicators is higher, which ranges from 0.790 to 0.894, with an AVE value of 0.734. This shows that this construct is able to explain more than 73% of the variance of its indicators. The Cronbach's Alpha value of 0.879 and Composite Reliability of 0.917 confirm that this variable has excellent reliability.

The self-regulation learning variable also showed strong results with its indicator loading factor values ranging from 0.734 to 0.871, AVE value of 0.693, Cronbach's Alpha of 0.851, and Composite Reliability of 0.900. These values indicate that this variable is highly reliable and valid. The Social Support x Authoritative Parenting Style interaction, the loading factor, AVE, Cronbach's Alpha, and Composite Reliability values are all 1.00. This likely indicates that this interaction was calculated as a latent variable with one perfect indicator, which is often used in moderation models to simplify analyses. Overall, these results indicate that the measurement model is of good quality, with valid and reliable indicators for all measured variables.



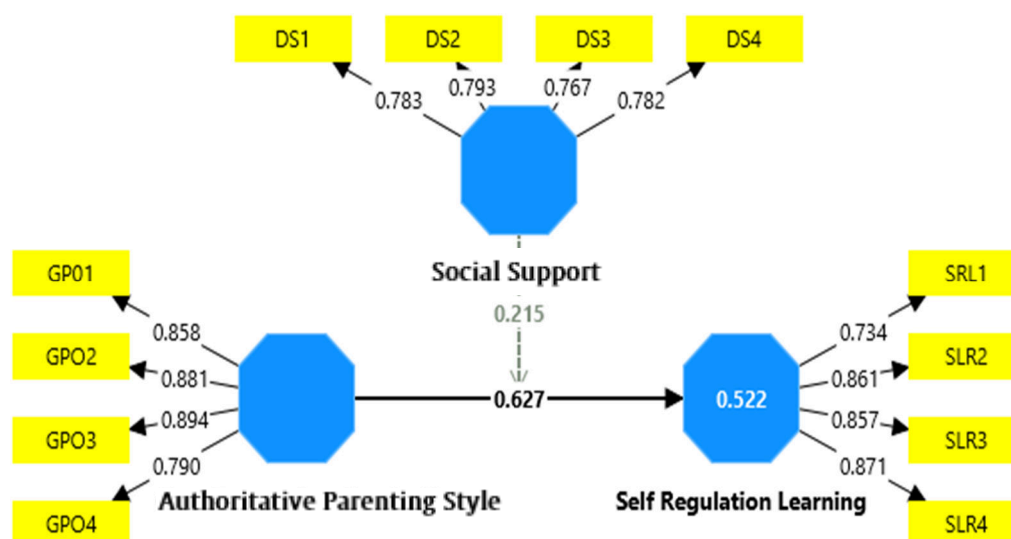


Table 2 Analysis Based on the Data

Table 2. Measurement Model Evaluation Values

Variables	Indicators	Loading Factor	AVE	Cronbach Alpha	Composite Reliability
Social Support	DS1	0,783	0,611	0,789	0,863
	DS2	0,793			
	DS3	0,767			
	DS4	0,782			
Authoritative Parenting Style	GPO1	0,858	0,734	0,879	0,917
	GPO2	0,881			
	GPO3	0,894			
	GPO4	0,790			
SLR	SRL1	0,734	0,693	0,851	0,900
	SRL2	0,861			
	SRL3	0,857			
	SRL4	0,871			
Social Support x Authoritative Parenting Style	DSxPO	1,00	1,00	1,00	1,00

Table 3. Fornell-Larcker Criterion

Variables	Social Support	Authoritative Parenting Style	SLR
Social Support	0,782		
Authoritative Parenting Style	0,683	0,857	
SLR	0,537	0,691	0,833

Discriminant validity is one of the important aspects of the measurement model that is used to ensure that a construct in the study has a clear distinction from other constructs. One commonly used method to assess discriminant validity is the Fornell-Larcker Criterion, which proposes that the square root of the Average Variance Extracted (AVE) for each construct should be greater than its correlation to other constructs in the (Fornell & Larcker, 1981) If this criterion is met, it can be concluded that each construct in the model has good discriminant validity and can be clearly distinguished from other variables.

Based on Table 2: Fornell-Larcker Criterion, the discriminant validity in this measurement model shows good results. The square root AVE value for Social Support is 0.782, which is greater than its

correlation with Authoritative Parenting Style (0.683) and Self-Regulated Learning (SLR) (0.537). This indicates that the Social Support construct explains more of its own variance than the variance shared with other constructs, so it can be concluded that this construct has good discriminant validity and can be distinguished from other constructs in the model..

Furthermore, the square root value of AVE for Authoritative Parenting Style is 0.857, which is greater than its correlation with Social Support (0.683) and Self-Regulated Learning (0.691). This shows that authoritative parenting style as a construct has a fairly clear distinction compared to the other variables. In other words, although there is a fairly strong relationship between authoritative parenting style and both social support and self-regulated learning, this variable still has unique characteristics in the research model.

In addition, the AVE square root value for Self-Regulated Learning (SLR) is 0.833, which is greater than its correlation with Social Support (0.537) and Authoritative Parenting Style (0.691). This result indicates that self-regulated learning is a construct that has good discriminant validity and does not experience multicollinearity problems with other variables. Although there is a relationship between SLR and other variables in the model, especially with authoritative parenting style, these results indicate that each construct remains significantly different from the other.

Overall, the Fornell-Larcker Criterion results in this study show that all constructs have good discriminant validity, because the AVE square root value for each variable is greater than its correlation with other variables. This shows that each construct in the model has unique characteristics and does not overlap with other constructs, which ultimately strengthens the reliability and validity of the measurement model used in this study. Thus, the findings of this study can be considered credible and able to accurately explain the relationship between variables without any conceptual mixing among the tested constructs.

**Table 4.** Heterotrait-Monotrait Ratio (HTMT)

Variables	Social Support	Parenting Style	SLR
Authoritative Parenting Style	0,807		
Self Regulation Learning	0,642	0,792	
Social Support x Authoritative Parenting Style	0,551	0,300	0,438

Discriminant validity is one of the important aspects in the measurement model to ensure that the constructs used in the study are truly different from each other. One method used to measure discriminant validity is the Heterotrait-Monotrait Ratio (HTMT), which aims to identify the extent to which a construct has a clear difference with other constructs. The general criteria used in assessing discriminant validity through HTMT is that the resulting value should be below 0.90. (Hair et al., 2021). If the HTMT value is below this threshold, then the model is considered to have good discriminant validity, which means that each construct in the model can be clearly distinguished.

Based on Table 3: Heterotrait-Monotrait Ratio (HTMT) in this study, a value of 0.807 was obtained for the relationship between Social Support and Authoritative Parenting Style. This value indicates that the two variables have a fairly strong relationship, but still below the 0.90 threshold, so it can be concluded that these two constructs have good discriminant validity. This means that social support and authoritative parenting style have clear conceptual differences and do not overlap in this research model.

Furthermore, the HTMT value between Social Support and Self-Regulated Learning (SLR) is 0.642. This value is well below the threshold of 0.90, which indicates that these two variables have a strong enough difference and can be well distinguished in the model. This suggests that social support and self-regulated learning are two different concepts, although they have a relationship in the context of influencing individual learning..

In addition, the relationship between Authoritative Parenting Style and Self-Regulated Learning (SLR) has an HTMT value of 0.792. This value is still within acceptable limits, which means that although there is a fairly close relationship between authoritative parenting style and self-regulated learning, these two variables remain conceptually distinct constructs. This supports the theory that parenting style can influence independence in learning, but remains a separate concept in this study.

Furthermore, analysis of the interaction between Social Support x Authoritative Parenting Style with other variables also showed good discriminant validity. The HTMT value for Social Support x Authoritative Parenting Style with Social Support is 0.551, indicating that this interaction has different characteristics from social support itself. Similarly, the HTMT value between Social Support x Authoritative Parenting Style with Authoritative Parenting Style is 0.300, which is very low, confirming that this interaction is truly a separate construct from authoritative parenting style as an individual variable. Finally, the HTMT value between Social Support x Authoritative Parenting Style and Self-Regulated Learning (SLR) is 0.438, which indicates that this interaction is not strongly related to self-regulated learning, thus ensuring that the model still has strong discriminant validity.

Overall, the results of the HTMT analysis in this study show that each construct has good discriminant validity, because all HTMT values are below the 0.90 limit. This ensures that each variable in the model truly reflects a unique concept and there is no overlap between constructs. Thus, the measurement model used in this study can be said to be valid in distinguishing each of the variables studied, which ultimately strengthens the credibility and reliability of the research findings.

### Structural Analysis Model

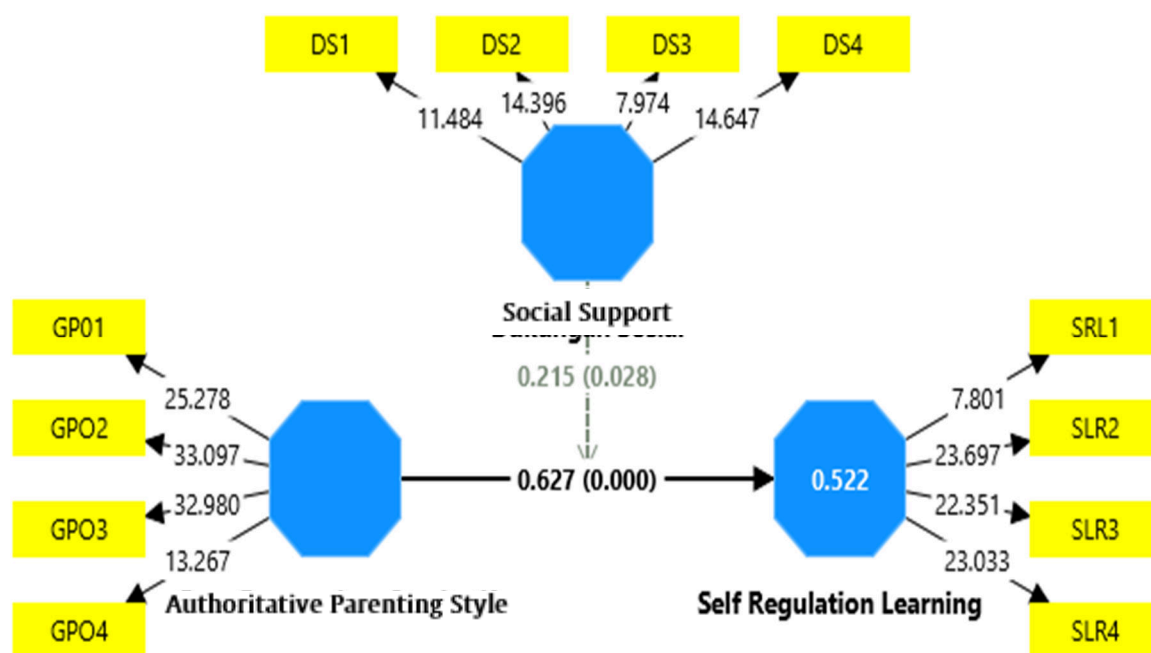


Figure 2 Structural Analysis Model

Based on Table 5. Hypothesis Test, the analysis results show that not all variables in this study have a significant influence on self-regulation learning. The relationship between social support and self-regulation learning shows an Original Sample ( ) value of 0.000, which means that there is no direct relationship between social support and self-regulation learning in this model. The P-Value of 0.999 indicates that this relationship is not statistically significant. That is, although social support is often considered important in educational contexts, the results of this study suggest that social support alone is not enough to improve self-regulation learning in university students. Social support may provide emotional benefits or external motivation, but it does not directly shape self-regulation skills in the learning process.



Table 5. Hypothesis Test

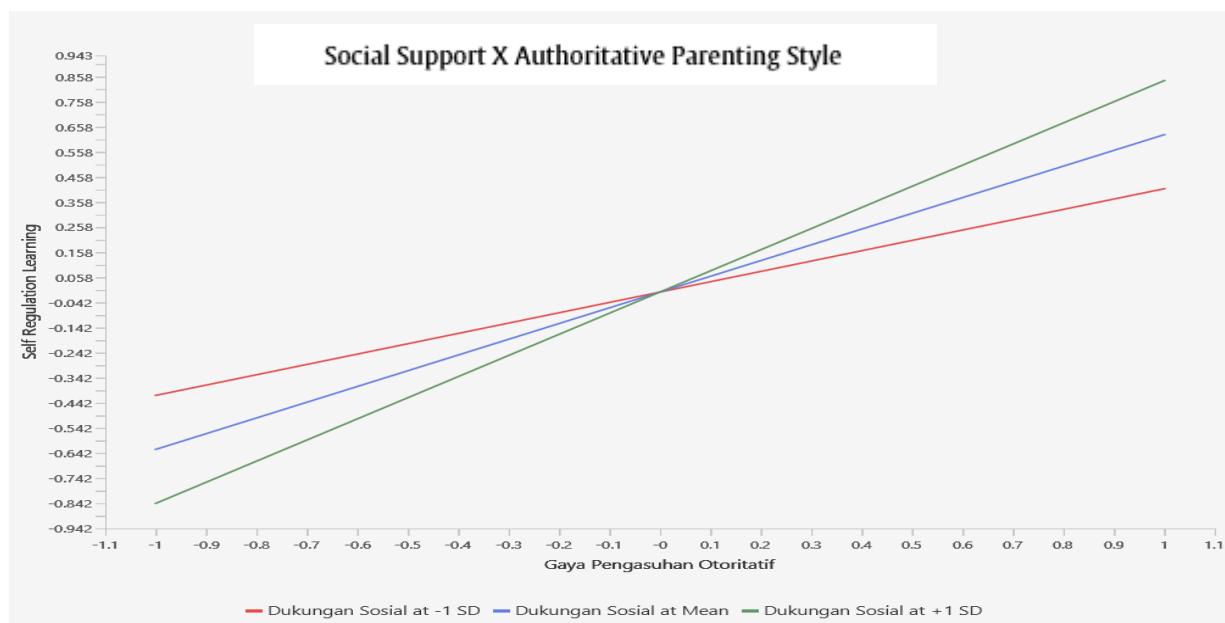
Variable	Original Sample	Sample Mean	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Social Support -> Self Regulation Learning	0,000	0,020	0,140	0,001	0,999
Authoritative Parenting Style -> Self Regulation Learning	0,627	0,614	0,170	3,682	0,000
Social Support x Authoritative Parenting Style -> Self Regulation Learning	0,215	0,218	0,098	2,196	0,028

In contrast, authoritative parenting style has a significant influence on self-regulation learning, with a coefficient of 0.627 and a P-Value of 0.000. The T-Statistics value of 3.682 indicates that this relationship is very strong and significant. These results indicate that authoritative parenting style plays a major role in improving self-regulation learning. Authoritative parenting style, which is characterised by a balance between control and freedom, encourages students to be more independent, responsible, and have better self-regulation skills in learning. Parents who apply this parenting style provide clear guidance, but also provide space for children to make their own decisions, which ultimately improves their ability to organise learning strategies and control themselves in facing academic challenges.

Furthermore, the interaction effect between social support and authoritative parenting style on self-regulation learning showed significant results. The coefficient of 0.215 indicates that the combination of these two factors makes an additional contribution to self-regulation learning, albeit on a more moderate scale compared to the direct effect of authoritative parenting style. The P-Value of 0.028 and T-Statistics of 2.196 indicate that this moderating effect is significant. This means that social support becomes more effective in enhancing self-regulation learning when combined with authoritative parenting style. Although social support does not have a direct impact, its presence can strengthen the influence of authoritative parenting style on students' ability to self-regulate their learning. These results suggest that an approach that combines social support and authoritative parenting style is more effective in improving self-regulation learning than either factor alone. Students who get social support from their environment whether from family, friends, or community - with authoritative parenting that provides a balance between freedom and guidance, tend to have better self-regulation in their learning process.

Overall, this study confirmed that self-regulation learning is more influenced by authoritative parenting style than social support directly. However, the moderation effect shows that the combination of both can provide more optimal results. Therefore, in an effort to improve self-regulation learning in university students, it is important not only to rely on social support but also to pay attention to how parenting styles are applied by parents in shaping children's independence and self-regulation.

The interaction between social support and authoritative parenting style has a significant effect on self-regulation learning. This means that when social support is accompanied by authoritative parenting style, students' ability to self-regulate learning increases. In other words, social support becomes more effective when accompanied by authoritative parenting style. The results of hypothesis testing show that while social support on its own does not have a significant direct effect, the combination of social support and authoritative parenting style (moderating effect) makes a significant additional contribution to self-regulation learning. This confirms the importance of a holistic approach in improving self-regulation learning, emphasising the role of a supportive parenting style and the positive interaction between social support and parenting style.



**Figure 3** Simple slope analysis

Based on the interaction graph between social support and authoritative parenting style on self regulation learning, there is a significant moderating effect. The graph shows three lines representing the level of social support in three different conditions: -1 SD (low), mean (medium), and +1 SD (high). This indicates that Social Support acts as a moderator that strengthens the relationship between authoritative parenting style and self-regulation learning. When Social Support is high, the positive impact of authoritative parenting style on self regulation learning becomes greater. Conversely, when social support is low, this relationship weakens. Thus, this result confirms the importance of social support as a factor that strengthens the effectiveness of authoritative parenting style in improving self regulation learning.

**Table 6** Comparison of PLS Predict and LM Predict

Item	PLS RMSE	Q <sup>2</sup> Predict	LM RMSE
SRL1	0,408	0,316	0,434
SLR2	0,454	0,296	0,500
SLR3	0,459	0,236	0,520
SLR4	0,407	0,266	0,437

The overall predictive model is in the medium category, as most indicators have Q<sup>2</sup> Predict values in the range of 0.25-0.50. Based on these results, PLS showed better performance than LM in predicting Self Regulation Learning indicators. The PLS model produces lower RMSE and MAE values, and has a fairly good predictive ability based on the Q<sup>2</sup> Predict value. Therefore, PLS can be considered as a more accurate and efficient approach in the context of this study to predict self regulation learning than LM.

**Table 7.** Q<sup>2</sup> Predict PLS

Variables	Q <sup>2</sup> predict
Self Regulation Learning	0,413

The model for the self regulation learning variable has good predictive ability, with a Q<sup>2</sup>predict value of 0.413. This shows that the model is relevant enough and can be used to predict new data related to this variable.

## Evaluation of Goodness of Model and Model Fit

Table 8. R-square

Variables	R-square	R-square adjusted
Self Regulation Learning	0,522	0,503

Based on the analysis results, the R-square value for the Self Regulation Learning variable is 0.522, with an adjusted R-square of 0.503. This value indicates that 52.2% of the variance in self regulation learning can be explained by the independent variables in the model (social support and authoritative parenting style). Meanwhile, the slightly lower adjusted R-square value of 50.3% takes into account the complexity of the model by adjusting the number of predictors used. This value indicates that the model has moderate to strong predictive ability in explaining the SLR variable. The remaining 47.8% is explained by other factors outside the model that may not have been identified in this study. Thus, although this model is quite good at explaining the dependent variable, there is still room for further exploration to identify other factors that influence SLR.

Table 9. F Square

Variables	Self Regulation Learning
Social support	0,000
Authoritative parenting style	0,437
Social support x authoritative parenting style	0,076

Based on the results of the F Square analysis, the effect of each independent variable on the dependent variable of self-regulated learning can be explained as follows. The F Square value shows how much the relative contribution of each independent variable in explaining the variance of the dependent variable.

For the social support variable, the F Square value is 0.000, which indicates that the contribution of this variable to self regulation learning is very small or insignificant in the context of this model. This may indicate that social support does not have a strong direct influence on self regulation learning. In contrast, the authoritative parenting style variable has an F Square value of 0.437, which indicates a large and significant influence. This value indicates that authoritative parenting style contributes directly to self regulation learning. For the interaction of social support x authoritative parenting style, the F square value is 0.076 This value indicates a high and significant moderating influence on self regulation learning (Kenny, 2018) at  $p > (0.025)$ . This means that the combination of social support and authoritative parenting style can strengthen the influence on self regulation learning.

Table 10. Model Fit

Item	Saturated model	Estimated model
SRMR	0,086	0,086
d_UIS	0,576	0,573
d_G	0,307	0,306
Chi-square	147,300	146,798
NFI	0,757	0,758

The model evaluation results showed a good fit with an SRMR of 0.086, which is close to the ideal limit ( $<0.08$ ), and small differences in d\_UIS (0.573) and d\_G (0.306) between the saturated and estimated models. The chi-square was lower in the estimated model (146.798) than in the saturated model (147.300), supporting adequate fit. However, the NFI value of 0.758 was below the ideal threshold ( $> 0.90$ ), but still acceptable for this study.

## Discussion

The purpose of the study was to determine the authoritative parenting style on students' self-regulated learning, with social support as a moderating variable in strengthening or weakening the influence of parenting on self-regulated learning. Overall, the results show that authoritative

parenting style is the main predictor for self-regulated learning, while the influence of social support and its moderating effect are high categories so that social support can be a variable that provides reinforcement in improving self-regulated learning.

This research shows that authoritative parenting style has a significant influence on students' SRL ability. Parenting that is balanced between firm control and emotional support is able to encourage students to be more responsible and independent in organising their learning. Students who are raised with authoritative parenting style tend to have better planning, monitoring, and evaluation skills in the learning process.

The results of this study are supported by the findings of Amani et al, (2020) which showed that authoritative parenting style has a significant positive influence on early adolescents' academic achievement, especially through its influence on SRL. Parental involvement also positively influences the academic achievement quality of parenting style which plays an important role in strengthening the relationship.

Authoritative parenting has a positive correlation with adolescents' school performance, while authoritarian and permissive parenting have a negative correlation (Steinberg et al., 1989). This indicates that students who describe their parents as more democratic, warmer, and more supportive get higher grades in school than their peers. The results of Eko Suryadi's research (2021) authoritative parenting significantly contributes to the development of children's interpersonal intelligence. With this intelligence, children will find it easier to communicate and manage social interactions, take advantage of support from the environment, and maximise collaboration in the learning process.

The results of Anggrainy's research (2020) show that the application of authoritative parenting accompanied by strict discipline and providing emotional support will help adolescents develop positive behaviour, responsible attitudes, and independent mindsets. Parents who have an understanding of their children who are already students by encouraging open communication, respect, and self-control, form a healthy and adaptive character so that children have independence in managing themselves responsibly. This is in line with the principles of authoritative parenting put forward by (Baumrind, 1966) rational child activity, two-way communication, building children's independence, recognition of children's interests. Authoritative parenting creates a balance between consistent rules and warm emotional support helping children develop good emotional and social skills (Carapito et al., 2020).

Research conducted by Abdillah et al, (2025) authoritative parenting encourages the development of self-regulation in late adolescents through clear direction and encouragement to take responsibility for their behaviour. This approach creates a balance between control and freedom, so that adolescents learn to manage emotions and behaviour independently. With good self-regulation, adolescents are better able to control aggressiveness and deal with situations constructively. The way parents educate and provide direction to their children greatly influences the way children internalise or externalise the symbols or values they receive, which in turn affects their social and emotional development (Chen & Bokoch, 2024).

Authoritative parenting style has a significant positive impact on child and adolescent development, particularly in academic achievement, interpersonal intelligence, self-regulation and social-emotional skills. With two-way communication, warm emotional support and consistent rules, it creates a balance between control and freedom, helping children build positive character traits, manage emotions and face life's challenges independently and responsibly.

Social support amplifies the positive effects of authoritative parenting by providing additional resources for children and adolescents to manage emotions and develop self-regulation (Pinquart, 2017). In addition, positive social relationships and emotional support from peers, as found by Shuo et al (2022) also assist individuals in developing the ability to effectively manage their emotions, thoughts and behaviours.

The results of this study are in line with (Zahrawati B et al., 2024) found that social support from peers (Halimah et al., 2017), friends, family and people close to students is a factor that can moderate self-regulated learning. Forms of support include reducing anxiety, accessing resources and increasing perseverance in learning. The support provided by people around will make students more confident (Kusuma & Fathiyah, 2024) and feel that there will always be someone ready to help if they experience difficulties in fulfilling their learning needs. Social support will be able to increase one's resilience in facing challenges (Vadivel et al., 2022). This support will make students build their learning goals independently and avoid procrastination due to deliberate or low motivation (Wardati Maryam et al., 2019).

The results of research by Malau et al. (2022) authoritative parenting, encourages students to develop skills such as setting goals, managing time, monitoring progress, and reflecting on their learning outcomes. With a supportive parenting approach that provides balanced freedom, students become more confident, responsible, and motivated to take control of their own learning process. Students with good self-regulation will have clear targets, use effective learning strategies (such as summarising and self-evaluation), and apply good self-regulation are less likely to procrastinate (Abdi Zarrin et al., 2020).

The interaction between social support and authoritative parenting produced stronger effects on SRL than if each variable stood alone. Social support enhances the effectiveness of authoritative parenting, especially in situations that demand high self-regulation skills. The implications of these findings include the importance for parents to understand the role of authoritative parenting by providing purposeful freedom and creating warm communication. In addition, educational institutions need to create a supportive social environment, such as mentoring programmes, study groups, and collaborative activities that can strengthen students' learning motivation. Educational policies also need to integrate the roles of family, campus and social community to create a holistic and supportive learning environment.

Hypothesis testing results show that social support independently does not have a significant direct influence on self-regulated learning. However, the combination of social support and authoritative parenting style (moderating effect) made a significant additional contribution to this ability. This effect suggests that a harmonious relationship between a supportive family environment and positive social interaction is crucial in encouraging university students to self-regulate their learning. The findings confirm the importance of a holistic approach in enhancing self-regulated learning. Not only is supportive parenting a key factor, but also the positive interaction between social support and authoritative parenting is a key component. Therefore, efforts to enhance self-regulated learning should include strategies that facilitate this combination, such as providing training to parents to implement authoritative parenting and encouraging the development of supportive social networks in the educational environment. This combination allows students to have a strong emotional and social foundation to better manage their learning.

To enhance self-regulatory learning (SRL), educational institutions need to strengthen social support through mentoring programmes, study groups, and collaborative activities. Parents can be trained on authoritative parenting styles that support student self-regulation, such as providing freedom balanced with boundaries. Collaboration between lecturers and parents needs to be improved to create a supportive learning environment, both at home and on campus. In addition, educational policies should integrate a holistic approach by involving the family, campus and social environment. Periodic evaluation is also important to ensure the effectiveness of the programme in supporting students' SRL development.

## Conclusion

The results showed that social support did not have a significant direct influence on self-regulation learning (SRL). However, social support plays an important role as a moderator that strengthens the relationship between authoritative parenting style and SRL. Authoritative parenting style has a



significant positive influence on SRL, by encouraging students to be more responsible and able to self-regulate their learning. The interaction between social support and authoritative parenting style showed that when social support was high, the positive impact of authoritative parenting style on SRL became greater, whereas at low levels of social support, this relationship weakened. In conclusion, social support strengthens the effectiveness of authoritative parenting style in improving students' SRL. Therefore, efforts to improve SRL need to integrate adequate social support with supportive parenting styles.

This study has some limitations that need to be considered. This study only focuses on social support and authoritative parenting style as the main variables, without considering other factors that can also affect self-regulation learning, such as academic environment, intrinsic motivation, learning strategies, and students' psychological condition. In addition, the correlational research design only shows a statistical relationship without being able to confirm a direct cause-and-effect relationship. Generalisation of the results also needs to be done with caution as the study was limited to a specific population and cultural context. The quality of social support provided was not analysed in depth, so it is not yet known which form of social support is most effective in improving self-regulation learning. In addition, this study did not consider individual differences, such as emotional intelligence, level of independence, and learning style that could moderate the relationship between variables. Another limitation is the use of cross-sectional data, which only captures conditions at one point in time without seeing the development of self-regulation learning in the long term.

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