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Research Article

The Influence of Family Environment on Learning Attention and Learning Facilities at SD Negeri 1 Centre Pattallassang

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Abstract: Family environments play a crucial role in shaping students' learning processes, particularly at the primary education level. This study aims to examine the effect of the family environment on learning attention and the fulfillment of learning facilities and infrastructure among Grade VI students at UPT SD Negeri 1 Centre Pattallassang. Using a quantitative associative approach with an ex post facto design, data were collected from 85 students through a structured questionnaire and analyzed using descriptive statistics, simple linear regression, and canonical correlation analysis. The results indicate that the family environment has a positive and significant effect on learning attention ($B = 0.631$, $p < 0.001$) and on the fulfillment of learning facilities and infrastructure ($B = 0.723$, $p < 0.001$). The family environment explains 42.1% of the variance in learning attention and 48.6% of the variance in the fulfillment of learning facilities. Canonical correlation analysis further reveals a strong simultaneous relationship between the family environment and the combined outcomes of learning attention and learning facilities. These findings highlight the central role of the family as a key educational microsystem that supports both cognitive affective engagement and material learning conditions. The study underscores the importance of strengthening school family collaboration and family-based support strategies to enhance learning quality in primary education.

Keywords: Elementary School Students; Family Environment; Learning Attention; Learning Facilities; Learning Outcomes.

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1. Introduction

Basic education constitutes a critical foundation for long-term human capital development, as it represents the earliest formal stage in shaping not only literacy and numeracy skills but also learning habits, character, and social values that persist into adulthood. Globally, primary education is widely recognized as a strategic investment to foster inclusive, productive, and competitive societies. However, persistent learning disparities indicate that the promise of basic education has not been fully realized. The UNESCO Global Education Monitoring Report (2024) reveals that only 58% of students completing primary education attain minimum reading competencies, while merely 44% achieve expected standards in mathematics. Earlier evidence further underscores the severity of this learning crisis, with six out of ten children worldwide failing to reach basic proficiency in reading and numeracy. These findings suggest that learning challenges at the primary level are not solely attributable to classroom pedagogy, but are also shaped by broader ecological factors, including family environments, socioeconomic conditions, and access to learning resources at home.

Within this broader context, the family environment emerges as a pivotal external determinant of students' academic development, particularly at the primary education level. Empirical studies consistently demonstrate that parental involvement and supportive home learning environments are positively associated with students' learning attention, self-regulated study behaviors, and academic responsibility. A stable and emotionally supportive household contributes to students' capacity to focus, persist, and engage meaningfully with school tasks, while psychologically stressful home conditions may undermine concentration and learning motivation. Consequently, the quality of family interactions and the availability of learning-supportive facilities at home play a crucial role in shaping early learning habits and academic readiness.

Learning attention represents a central cognitive function that directly influences students' ability to process, comprehend, and retain academic information. Sustained attention has been shown to enhance learning effectiveness, particularly in subjects that require complex information processing and higher-order thinking. The development of attentional capacity in children is influenced by both intrapersonal factors, such as emotional stability and motivation, and socio-psychological factors, including parent–child relationships and structured daily routines [10]. Family environments that provide consistent emotional guidance, predictable learning schedules, and responsive parental engagement tend to support stronger attentional control, thereby enabling students to participate more actively and effectively in classroom learning.

Beyond emotional and cognitive support, the availability of adequate learning facilities constitutes an essential material condition for effective learning processes. Even simple learning tools and resources can significantly influence students' engagement and participation in both home- and school-based learning activities [11]. The provision of basic learning facilities—such as study desks, textbooks, appropriate lighting, and learning media—facilitates sustained attention and independent study practices. Accordingly, the fulfillment of learning infrastructure should be regarded as an integral component of comprehensive strategies aimed at improving the quality of primary education.

In the Indonesian context, the government has implemented several national initiatives, including the National Literacy Movement, School Operational Assistance (BOS), and the School Transformation Program, to strengthen literacy outcomes and enhance the quality of basic education. Despite these efforts, national evaluations continue to reveal substantial disparities in learning achievement between urban and rural areas. Data from the Ministry of Education, Culture, Research, and Technology indicate that schools in remote and eastern regions of Indonesia frequently face limitations in learning infrastructure, such as insufficient textbooks, interactive learning media, and educational technology. These structural constraints disproportionately affect students from economically disadvantaged families, who experience compounded challenges arising from limited emotional support and inadequate material resources at home. In such contexts, families are often expected to compensate for institutional shortcomings; however, many lack the financial capacity or pedagogical knowledge to do so, thereby exacerbating educational inequality.

Field observations conducted at UPT SD Negeri 1 Centre Pattallassang reveal pronounced socioeconomic disparities among students within the same classroom. Some students come from households with stable employment and adequate learning facilities, including designated study spaces, sufficient lighting, and internet access, while others reside in modest homes without dedicated learning areas or basic study resources. These conditions manifest directly in classroom learning behaviors, as observational data indicate that only approximately 47% of students demonstrate consistent focus and active engagement during lessons, whereas 53% frequently exhibit inattention, distractibility, or delayed responses to instructional guidance. Teachers further report that only about 35% of students receive regular parental assistance with learning activities at home, while the remaining 65% study independently without structured guidance. These empirical observations underscore the critical role of family environments—both in terms of emotional support and learning resource availability—in shaping students' attentional readiness and academic participation.

Previous studies have established the significant influence of family environments on students' academic and psychological development. Zhe Ding demonstrates that supportive family contexts enhance students' self-efficacy and learning motivation, leading to improved academic performance [12]. Similarly, Lolong emphasizes the role of family discipline and support in cultivating students' learning interests [13], while Asyha et al focus on character development through positive parenting practices and home environments [14]. Earlier research by Razza et al also links maternal caregiving quality to attentional capacities in early

childhood, highlighting its relevance to initial academic readiness [15]. Despite these contributions, existing studies have largely examined motivational, character-related, or self-efficacy outcomes in isolation, leaving a notable empirical gap regarding the simultaneous influence of family environments on both learning attention as a cognitive dimension and the fulfillment of learning facilities as an environmental support dimension.

Addressing this gap, the present study offers an integrated examination of how family environments influence two interrelated yet distinct dimensions of students' learning processes: learning attention and the fulfillment of learning facilities. By simultaneously linking internal cognitive aspects with external material conditions, this study advances a more holistic understanding of family-based influences on primary education. Moreover, the research is situated in a local context that remains underrepresented in educational research, namely Grade VI students at UPT SD Negeri 1 Centre Pattallassang, Takalar Regency, an area characterized by socioeconomic diversity. Drawing on empirical field observations that reveal disparities in both attentional engagement and access to learning resources, this study contributes theoretically by integrating cognitive and environmental perspectives, and practically by informing family-centered and context-sensitive educational strategies. Accordingly, the objective of this study is to examine the extent to which the family environment influences learning attention and the fulfillment of learning facilities among Grade VI students at UPT SD Negeri 1 Centre Pattallassang. By elucidating these relationships, the study seeks to enrich the literature on primary education and provide practical recommendations for schools, parents, and local education policymakers in strengthening educational quality through enhanced family engagement and support.

2. Literature review

Family Environment

The family environment is widely conceptualized as a primary ecosystem that shapes children's development and learning readiness through values, routines, and consistent forms of support embedded in everyday life. Within the educational trajectory of children, the family is positioned as the "main setting" for education, influencing not only intellectual growth but also emotional and spiritual dimensions that shape children's orientation toward learning [16], [17]. This role is reinforced when parents function as moral and behavioral models that children emulate, making the quality of household relationships a direct determinant of moral formation and learning motivation [18], [19]. From a developmental perspective, family harmony is not merely a background condition but a psychosocial context that enables children to develop emotional regulation and social competence—capabilities that support learning resilience, particularly in early stages [20]. Accordingly, the family environment should be treated as a multidimensional construct integrating physical, social, emotional, and spiritual conditions; it is not simply a "place to live" but an informal educational arena that directs the development of character and learning behaviors [21].

Theoretically, the components of the family environment can be mapped as a system operating through relational, structural, and affective mechanisms. Ecological Systems Theory positions the family as the most proximal microsystem, such that interpersonal relationships, parental involvement, values and norms, socioeconomic status, and the physical–psychological conditions of the home become direct pathways shaping children's development and learning experiences [22]. This perspective aligns with Attachment Theory, which emphasizes emotional bonds as the basis of security that enables exploration and adaptive learning. Importantly, the family environment does not function solely as "support"; it may also contain conflict and control patterns that affect children's psychological readiness. The Family Environment Scale extends this lens by identifying three dimensions—supportive, conflicted, and controlling that can either strengthen or weaken the home learning climate. This synthesis implies that family quality cannot be reduced to moral or economic factors alone; rather, emotional support and parental involvement are most effective when the home is also low in conflict and provides physical conditions that stabilize learning.

In supporting education, parental roles extend beyond material provision. Epstein's parental involvement model identifies six types of involvement—from creating learning-supportive homes to collaborating with community—underscoring that families contribute through both domestic channels (learning at home) and institutional channels (communicating, decision making, collaborating). Empirical evidence indicates that parental support correlates with learning motivation, academic outcomes, and socio-emotional development [23]. Thus, strengthening parents' capacities becomes strategic: when parents are empowered

with communication and problem-solving skills, they are more likely to build healthier relationships with children and schools [24]. However, parental involvement may also generate inequality because families differ in resources and access; consequently, "involvement" can operate as a mechanism that reproduces educational disparities [25]. In vulnerable situations—such as when children do not live with biological parents—support from guardians and school–family collaboration becomes crucial for educational continuity [26]. This synthesis shows that the family environment operates through two pathways: a relational–emotional pathway (modeling, attachment, communication) and a structural–instrumental pathway (time, discipline, resources), which together shape children's learning readiness.

Empirically, prior research identifies key family factors affecting student learning, particularly family relationships, household income, parent–child relationships, and parenting styles [27]. Emotional support and a healthy home environment have been found to enhance self-efficacy and learning enthusiasm, whereas authoritarian or overly pressuring parenting may reduce motivation and independence [12]. In practice, parental guidance, supervision, and direct support help build consistent and disciplined learning behaviors [28], [29]. Consequently, indicators of the family environment in educational contexts can be operationalized as observable and measurable dimensions: parenting style, relationships among family members, home atmosphere, family economic conditions, and parents' understanding of education [30], complemented by parental motivation, learning support, active involvement, and household harmony [31]. Theoretically, these indicators reflect both the interactional and structural aspects of the family microsystem and the channels of parental engagement in education . Nevertheless, the cited studies largely concentrate on family influences on motivation, character, or general academic performance, leaving scope to examine the family environment as a predictor of more specific learning process variables, including learning attention and the enabling conditions of learning facilities.

Learning Attention

Learning attention is a cognitive prerequisite that determines the quality of students' engagement in receiving and processing academic information. In classical cognitive psychology, attention is conceptualized as selective awareness directed toward particular stimuli while excluding others, enabling mental resources to be allocated to relevant tasks. Progressive educational theory further argues that attention is not merely "imposed" from outside but emerges from interest and active engagement when learning experiences are meaningful to students. In contemporary contexts, attention has also become a key variable in technology-based adaptive assessment systems because the intensity of students' mental concentration influences the validity of engagement and learning outcomes captured through such systems [32]. Synthesizing these perspectives positions learning attention as an active, dynamic, and context-dependent mechanism that interacts with student interest, instructional design, and the broader learning environment.

Factors shaping learning attention can be explained through Selective Attention Theory, which views attention as a "filter" that screens information based on relevance and stimulus intensity. This framework clarifies why attention is influenced by internal conditions (emotional stability, motivation, personality, processing capacity) and external conditions (learning atmosphere, teaching style, family support, and the characteristics of learning stimuli). In digital learning settings, technical and linguistic factors—such as content complexity, environmental noise, and the clarity or attractiveness of instructional media—also affect sustained focus. Empirical findings on students with high learning attention suggest that attention is associated with learning organization, time management, self-control, and openness in communicating academic difficulties [33]. Related evidence indicates that high-attention students exhibit better control over cognitive processing, enabling efficient information handling even when deep learning strategies are not always dominant. Mechanistically, attention functions as the initial gate that channels information from sensory memory into more stable storage systems [34] and expands working capacity to manage simultaneous information during learning tasks [35]. Accordingly, learning attention emerges from complex interactions among cognitive capacity, emotion regulation, social support, and stimulus design, implying that efforts to improve attention must be contextualized within students' learning ecology.

The relationship between the family environment and learning attention can be explained through Social Learning Theory, which posits that children acquire behaviors through observation, imitation, and social interaction, particularly with significant figures in the home. From this perspective, learning attention develops not only through school demands but also through internalized values and behavioral patterns modeled by parents, such as persistence, valuing education, and discipline. Empirical studies indicate that families that instill positive

norms contribute to character formation aligned with attentiveness in learning [36]. Family support and motivation are directly related to students' focus and engagement, whereas emotionally stressful family environments can reduce concentration and interest in learning [31]. At the measurement level, internally experienced attention can be inferred from behavioral indicators such as gaze orientation, head pose, responsiveness to interaction, and patterns of learning activity during class [37]. In online learning, gaze synchronization, frequency of participation, and responsiveness to instructional stimuli also serve as attention indicators [38]. These measurement frameworks confirm that attention can be behaviorally observed and mapped, while still requiring interpretation within the family context and the broader learning environment.

Fulfillment of Learning Facilities and Infrastructure

The fulfillment of learning facilities and infrastructure represents an instrumental dimension shaping learning experiences, as physical resources and equipment serve as material prerequisites for effective and efficient instruction. Normatively, the Regulation of the Minister of National Education of the Republic of Indonesia Number 24 of 2007 distinguishes facilities (sarana) as resources directly used in instruction and infrastructure (prasarana) as supporting physical provisions that influence comfort and the smoothness of learning processes. Educational literature emphasizes that adequate facilities contribute to a conducive learning environment, increase student motivation, and support teachers in implementing structured and effective instruction [39]. From a broader perspective, infrastructure includes learning spaces, laboratories, libraries, and technical systems that make learning environments functional. Recent research also stresses that infrastructure extends beyond physical rooms to include access to educational technology and health–safety supports, such as lighting, ventilation, and essential facilities that influence concentration and motivation. Facility planning theory underscores that well-designed educational facilities are those that support learning goals, minimize disruption, and enhance student comfort and safety.

The relationship between the family environment and the availability of learning facilities at home is important because families often act as the primary providers of learning resources that determine students' capacity for independent study beyond school. Conceptual work on learning supports suggests that educational resources are not limited to physical items (textbooks, desks, stationery) but may also include pedagogical supports that enhance access to learning, such as media, methods, and instructional planning that sustain student engagement. At a minimum level, adequate facilities at home and school—including textbooks, desks and chairs, stationery, and supportive electronic media—are regarded as fundamental for enabling active student participation in learning [40]. Thus, facility fulfillment operates through two pathways: it shapes learning conditions that are comfortable and low in distraction and simultaneously facilitates consistent, directed learning practices.

Indicators of the fulfillment of learning facilities and infrastructure can be derived from a combination of normative standards and empirical research. Key indicators include the availability of stationery and textbooks, adequate study desks and chairs, access to learning media and educational technology, quiet and comfortable study spaces, and quality lighting, ventilation, and cleanliness of learning areas. Beyond mere availability, functional adequacy and effective use of resources, including the suitability of learning media and regularity of use, are also important indicators of fulfillment. Consistently, national standards specify minimum requirements for facilities and infrastructure that support learning (Regulation of the Minister of National Education of the Republic of Indonesia Number 24 of 2007). This synthesis implies that fulfillment should not be interpreted simply as "present or absent" but as a level of adequacy and quality that meaningfully affects students' concentration, motivation, and learning engagement.

3. Proposed Method

Research Design and Setting

This study employed a quantitative associative design with an ex post facto approach to examine the relationships between the family environment as the independent variable and two dependent variables, namely learning attention and the fulfillment of learning facilities and infrastructure. The ex post facto design was selected because the study assessed naturally occurring conditions without manipulating or administering any treatment, relying instead on observations of existing student experiences and perceptions. The research was conducted at UPT SD Negeri 1 Centre Pattallassang, located in Pattallassang District, Takalar Regency, South Sulawesi, Indonesia. The site was selected because it provided an adequate number of

Grade VI students and exhibited diverse family backgrounds, which was considered suitable for investigating variations in family environment and their associations with learning-related outcomes. Data collection took place during the first semester of the 2025/2026 academic year, from September to November 2025, when Grade VI learning activities were relatively intensive and students had accumulated sufficient learning experiences to report their perceptions.

Population and Sample

The population comprised all Grade VI students at UPT SD Negeri 1 Centre Pattallassang in the 2024/2025 academic year (N = 108), distributed across three classes: VI R.A. Kartini (36 students), VI Cut Nyak Dhein (34 students), and VI W.R. Supratman (38 students), based on school Dapodik records. The sample size was determined using Slovin's formula with a 5% margin of error (e = 0.05), yielding a total sample of 85 students (Sugiyono, 2018). Proportional random sampling was then applied to ensure that each class was represented according to its share of the population, resulting in 31 students from VI R.A. Kartini, 27 from VI Cut Nyak Dhein, and 30 from VI W.R. Supratman.

Data Collection Procedures

Data were collected primarily through a structured, closed-ended questionnaire administered to Grade VI students. The questionnaire was developed based on theoretically derived indicators for each study variable and was designed to capture students' perceptions of their family environment, their learning attention, and the fulfillment of learning facilities and infrastructure. Responses were measured using a 4-point Likert scale (1–4) with both positively and negatively worded items, where scoring was reversed for negative statements to maintain directional consistency (Sugiyono, 2017). A four-category response format was intentionally used because it was deemed developmentally appropriate for Grade VI students, who are generally in Piaget's concrete operational stage; fewer response options were expected to facilitate comprehension and reduce response burden. In addition to the questionnaire, documentation was used to obtain supporting information related to student characteristics, the number of respondents, and contextual school records or photographic documentation of learning activities, strengthening the contextual description and supporting the credibility of the survey-based findings.

Instruments and Measures

All variables were operationalized into measurable indicators and assessed through the Likert-type questionnaire. The family environment (X) was measured as students' perceptions of family-based conditions supporting learning, encompassing the home's physical and psychosocial learning context and the availability of learning-support resources provided by the family. Learning attention (Y_1) was measured as the degree of student focus, concentration, and active engagement during learning activities, including the ability to sustain attention, follow lessons consistently, and participate in academic tasks. The fulfillment of learning facilities and infrastructure (Y_2) was measured as the extent to which students had adequate and appropriate learning resources and facilities supporting learning at home and at school, including the availability of books, stationery, study furniture, learning media, and a feasible study space.

Data Analysis Techniques

Data analysis was conducted using SPSS and involved both descriptive and inferential statistics. Descriptive statistics were used to summarize the distribution of responses for each variable, including mean scores, minimum and maximum values, standard deviations, and the percentage distribution across response categories, providing an overview of students' perceived family environment, learning attention, and learning-facility fulfillment. Inferential analysis was implemented to test the study hypotheses through assumption testing and regression modeling. Assumption tests included normality testing using the One-Sample Kolmogorov–Smirnov test, with data considered normally distributed when the significance value exceeded 0.05. Linearity between the family environment and each dependent variable was assessed using the Test for Linearity, with linearity indicated when the Deviation from Linearity significance value was greater than 0.05. Heteroskedasticity was examined through residual scatterplots and, where necessary, reinforced using the Glejser test; the regression model was considered free of heteroskedasticity when no systematic pattern appeared in the scatterplot or when the Glejser test significance value exceeded 0.05. Hypothesis testing was conducted using simple linear regression performed separately for each dependent variable, producing two structural equations: $Y_1 = a_1 + b_1X + e_1$ and $Y_2 = a_2 + b_2X + e_2$, where Y_1

represents learning attention, Y_2 represents learning-facility fulfillment, X represents the family environment, a denotes the intercept, b denotes the regression coefficient, and e denotes the error term. Statistical decisions were made at the 0.05 significance level; p-values below 0.05 led to rejection of the null hypothesis. As an additional multivariate analysis, canonical correlation analysis was conducted to examine the simultaneous association between the set of variables comprising the family environment and the set comprising learning attention and learning-facility fulfillment. This analysis was used as a complementary approach to evaluate multivariate relationship strength rather than causal influence, with interpretation based on canonical correlations, eigenvalues, and Wilks' Lambda.

4. Results and Discussion

Results

Normality Test (Kolmogorov–Smirnov)

The normality test was conducted to determine whether the data for each variable were normally distributed as a prerequisite for regression analysis. Given that the sample size exceeded 50 (N = 85), the Kolmogorov–Smirnov test was applied. Data were considered normally distributed when the significance value (Sig.) exceeded 0.05.

Table 1. Results of the Kolmogorov–Smirnov Normality Test.

Variable	Sig.	Interpretation
Family Environment (X1)	0.073	Normally distributed
Learning Attention (Y1)	0.054	Normally distributed
Fulfillment of Learning Facilities and Infrastructure (Y2)	0.083	Normally distributed

All variables showed significance values greater than 0.05 (X1 = 0.073; Y1 = 0.054; Y2 = 0.083), indicating that the data were normally distributed and met the normality assumption for regression analysis.

Linearity Test (Test for Linearity)

The linearity test was conducted to ensure that the relationships between the independent variable and the dependent variables followed a linear pattern. A relationship was considered linear when the significance value of the Deviation from Linearity exceeded 0.05.

Table 2. Results of the Linearity Test.

Variable Relationship	Deviation from Linearity (Sig.)	Interpretation
Family Environment (X1) → Learning Attention (Y1)	0.109	Linear
Family Environment (X1) → Fulfillment of Learning Facilities (Y2)	0.092	Linear

The Deviation from Linearity significance values for both relationships were greater than 0.05 (0.109 and 0.092). Thus, the relationships between the family environment and both dependent variables were linear, and regression analysis could be appropriately conducted.

Heteroskedasticity Test

The scatterplot test was used to examine whether the residuals were randomly distributed and did not form a specific pattern. A regression model is considered free from heteroskedasticity when residual points are randomly scattered above and below the zero line.

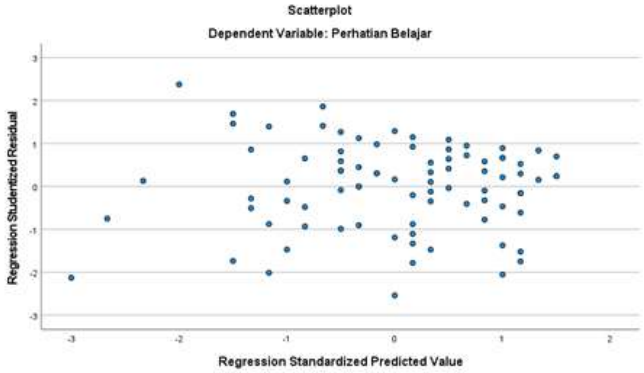

Figure 1. Scatterplot of the Heteroskedasticity Test for the X1 → Y1 Model (Learning Attention).

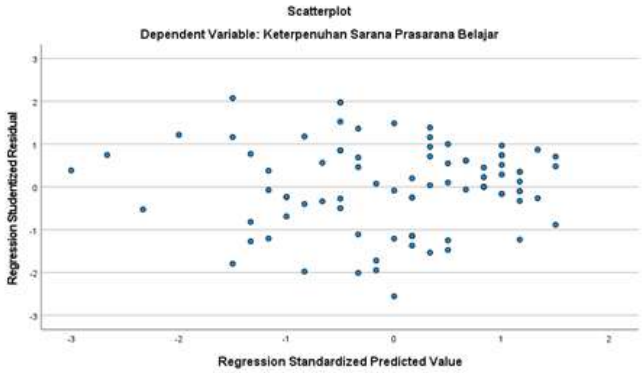

Figure 2. Scatterplot of the Heteroskedasticity Test for the X1 → Y2 Model (Fulfillment of Learning Facilities).

The scatterplots for both Y1 and Y2 models showed randomly dispersed residual points without any funnel-shaped or wave-like patterns. This indicates that both regression models met the homoskedasticity assumption. Next, the Glejser test was performed by regressing the absolute residual values on the independent variable. A model is considered free from heteroskedasticity when the significance value exceeds 0.05.

Table 3. Results of the Glejser Heteroskedasticity Test.

Model	Direction of Relationship	Sig.	Interpretation
Model 1	X1 → Y1	0.054	No heteroskedasticity
Model 2	X1 → Y2	0.146	No heteroskedasticity

The significance values for both models were greater than 0.05 (0.054 and 0.146), indicating that the independent variable did not significantly affect the residuals. Thus, both regression models were free from heteroskedasticity. The consistency between the scatterplot and Glejser test results confirms that the assumption of homoskedastic residuals was satisfied.

Simple Linear Regression Analysis

Effect of Family Environment (X1) on Learning Attention (Y1)

Simple linear regression analysis was conducted to examine the effect of the family environment on students' learning attention. The regression model was considered significant when the p-value was less than 0.05.

Table 4. Results of Simple Linear Regression Analysis (X1 → Y1).

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	19.106	4.170	—	4.582	0.000
Family Environment (X1)	0.631	0.081	0.649	7.763	0.000

The regression model was statistically significant (Sig. = 0.000). The unstandardized coefficient (B = 0.631) indicates that a one-unit increase in the family environment score was associated with a 0.631-unit increase in learning attention. The regression equation was Y1 = 19.106 + 0.631X1. The standardized beta coefficient (β = 0.649) and t-value (7.763) indicate a strong and statistically significant positive effect.

Effect of Family Environment (X1) on Fulfillment of Learning Facilities and Infrastructure (Y2)

Simple linear regression analysis was also used to examine the effect of the family environment on the fulfillment of learning facilities and infrastructure. The model was considered significant when the p-value was less than 0.05.

Table 5. Results of Simple Linear Regression Analysis (X1 → Y2).

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	13.530	4.186	—	3.233	0.002
Family Environment (X1)	0.723	0.082	0.697	8.860	0.000

The regression model was statistically significant (Sig. = 0.000). The unstandardized coefficient (B = 0.723) indicates that a one-unit increase in the family environment score was associated with a 0.723-unit increase in students' perceived fulfillment of learning facilities and infrastructure. The regression equation was Y2 = 13.530 + 0.723X1. The standardized beta coefficient (β = 0.697) and t-value (8.860) indicate a strong and statistically significant positive effect.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) was used to assess the proportion of variance in the dependent variables explained by the independent variable. Higher R^2 values indicate stronger explanatory power of the regression model.

Table 6. Coefficient of Determination (R^2).

Model	Direction of Relationship	R Square	Adjusted R Square
Model 1	X1 → Y1	0.421	0.414
Model 2	X1 → Y2	0.486	0.480

Model 1 shows that the family environment explained 42.1% of the variance in learning attention (Adjusted $R^2 = 0.414$), while the remaining 57.9% was influenced by other factors outside the model. Model 2 indicates that the family environment explained 48.6% of the variance in the fulfillment of learning facilities and infrastructure (Adjusted $R^2 = 0.480$), with the remaining 51.4% attributable to external factors. These values indicate moderate to strong explanatory power in social science research.

Canonical Correlation Analysis

Canonical correlation analysis was conducted to examine the simultaneous relationship between the independent variable (family environment) and the set of dependent variables (learning attention and fulfillment of learning facilities and infrastructure). This analysis assesses multivariate association rather than causal influence.

Table 6. Results of Canonical Correlation Analysis

Canonical Function	Canonical Correlation	Eigenvalue	Wilks' Lambda
1	0.743	1.230	0.449

The canonical correlation coefficient of **0.743** indicates a strong simultaneous relationship between the family environment and the combined set of learning attention and fulfillment of learning facilities and infrastructure. The eigenvalue of **1.230** suggests that the first canonical function has adequate explanatory power, while Wilks' Lambda of **0.449** indicates that the proportion of unexplained variance is relatively small, supporting a strong multivariate association.

Discussion

Effect of Family Environment on Students' Learning Attention

The findings demonstrate that the family environment has a positive and significant effect on students' learning attention, as indicated by the regression coefficient ($B = 0.631$, $p < 0.001$). This result suggests that improvements in family support, structure, and learning-related routines are associated with higher levels of students' attentional engagement during learning activities. The coefficient of determination ($R^2 = 0.421$) further indicates that 42.1% of the variance in learning attention can be explained by the family environment, underscoring its substantial contribution as an external determinant of attentional behavior, despite the presence of other influencing factors beyond the model.

From a theoretical perspective, this finding is consistent with Bronfenbrenner's ecological framework, which positions the family as the most immediate microsystem shaping children's behavioral regulation and learning habits [41]. A supportive home atmosphere, active parental involvement, and effective parent–child communication contribute to emotional stability and structured routines, enabling students to sustain attention during learning. Empirically, this result aligns with Lolong (2024), who reported a significant positive association between family support and students' learning interest and attention [13], as well as with Riswara et al. (2023), who found that supportive family environments enhanced students' attention and engagement even in online learning contexts [42]. Collectively, these findings reinforce the view that learning attention is not solely a classroom-based phenomenon but is strongly shaped by family conditions that foster consistent and focused learning behaviors.

Effect of Family Environment on the Fulfillment of Learning Facilities and Infrastructure

The results also reveal a significant positive effect of the family environment on the fulfillment of learning facilities and infrastructure, as reflected by the regression coefficient ($B = 0.723$, $p < 0.001$). This indicates that students from more supportive family environments perceive higher levels of adequacy in learning facilities available to them. The explanatory power of the model is considerable, with the family environment accounting for 48.6% of the variance in the fulfillment of learning facilities ($R^2 = 0.486$), highlighting the central role of families in providing material conditions that support learning.

Theoretically, this finding is consistent with ecological perspectives that emphasize the family as a primary provider of instrumental learning resources within the child's immediate environment [43]. Families play a critical role in supplying essential learning facilities, including books, stationery, study spaces, adequate lighting, and increasingly, digital devices that support contemporary learning demands. When such resources are sufficiently available at home, students experience greater readiness and perceive their learning environment as more supportive. This result is in line with Suyono (2012), who found that family socioeconomic background strongly influences parents' capacity to provide learning facilities [44], as well as with Lestari et al. (2025), who demonstrated that parental socioeconomic conditions affect academic outcomes primarily through the provision of adequate educational resources [45]. Together, these findings confirm that family support operates not only through emotional and motivational pathways but also through material provision, which directly shapes students' perceptions of learning readiness and opportunity.

6. Conclusions

This study concludes that the family environment plays a significant role in shaping both learning attention and the fulfillment of learning facilities and infrastructure among Grade VI students at UPT SD Negeri 1 Centre Pattallassang. Overall, the conditions of the family environment, learning attention, and learning facilities were found to be at a generally favorable level, indicating that most students receive adequate family support to facilitate their learning processes. The main findings demonstrate a positive and significant influence of the family environment on students' learning attention as well as on the fulfillment of learning facilities, suggesting that a more supportive family context is associated with higher levels of attentional engagement and better-perceived adequacy of learning resources.

From a theoretical perspective, this study reinforces ecological frameworks of education that position the family as a primary microsystem influencing children's learning processes through both psychological pathways, such as attention regulation, and instrumental pathways, such as the provision of learning facilities. The findings contribute conceptually by highlighting the interconnectedness of affective–cognitive and material dimensions of learning within the family context. Practically, these results underscore the importance of strengthening collaboration between schools and families to create supportive learning environments. Schools are encouraged to enhance communication and parental engagement programs, while families are urged to play a more active role in supporting learning at home. At the policy level, the findings point to the need for local governments to reduce disparities in learning facilities by providing educational resources and parental empowerment programs, particularly for families from lower socioeconomic backgrounds.

Despite its contributions, this study has several limitations. The research was conducted in a single primary school, which may limit the generalizability of the findings to broader educational contexts. In addition, the study focused solely on the family environment as a predictor, without simultaneously examining other potential influences such as learning motivation, learning styles, peer support, or classroom instructional quality. Future research is therefore recommended to involve more diverse and larger samples and to incorporate additional psychological and social variables in order to develop a more comprehensive understanding of the factors influencing students' learning attention and the fulfillment of learning facilities and infrastructure.

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