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Determinants of Average Years of Schooling in Garut Regency: An Exploratory Factor Analysis Approach

Dhina Amalia Fitraia[1], Gugun Geusan Akbar[2], Aceng Ulumudin[3], Ikeu Kania[4], Dodi Yudiardi[5]
[1,2,3,4] Postgraduate Program at the University of Garut
Corresponding Author: Dhina.amalia@uniga.ac.id

Abstract
Background. Average School Length (RLS) is an important indicator in measuring the level of educational participation in a region. Garut Regency still faces challenges in improving RLS, which is influenced by various economic, social, and educational policy factors.
Aims. This study aims to identify the main factors that affect RLS and analyze the differences in RLS between regions in Garut Regency.
Methods. This study uses a quantitative approach with the Exploratory Factor Analysis (EFA) method to group interrelated variables into main factors. In addition, the ANOVA test was carried out to identify RLS differences between regions, with further tests by Bonferroni and Games-Howell to see the groups of regions that had significant differences.
Result. The results of the analysis show that there are three main factors that affect RLS, namely (1) Economics and Accessibility of Education, (2) Educational Environment and Policy, and (3) Social Dynamics and Learning Motivation. Economic factors and accessibility have a dominant role, especially related to family income, education costs, and the availability of school facilities and transportation. The results of the ANOVA test showed a significant difference in RLS between regions ($p = 0.011$), with the Cisurupan area having a higher RLS than Limbangan and Pakenjeng.
Conclusion. The findings of this study confirm that improving educational infrastructure, region-based policies, and the role of families and communities are very important in increasing school participation rates.
Implication. The implications of this study encourage the need for more adaptive policy interventions to the socio-economic characteristics of the region and the strengthening of student motivation programs.

Keywords: Average School Duration, Exploratory Factor Analysis, ANOVA, Educational Accessibility, Education Policy.

INTRODUCTION

Education is the main factor in improving the quality of human resources (HR) and community welfare. An indicator that is often used to measure community participation in formal education is the average length of schooling (RLS). RLS reflects the number of years a person spends in formal education, which directly impacts the productivity of the workforce, the level of welfare, and the competitiveness of an area (UNESCO, 2015; World Bank, 2018).

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In Indonesia, the government has adopted various education policies, such as the 12-Year Compulsory Learning Program and the Smart Indonesia Program, to increase school participation rates. However, in some areas, including Garut Regency, RLS is still far from the national target. Data from the Central Statistics Agency (BPS, 2023) shows that the RLS in Garut Regency in 2023 will only reach 7.84 years, while the national target is 12 years. This means that most people in Garut only receive education up to the 1st-grade junior high school (SMP) level.

Various factors can affect the low average length of schooling (RLS), such as economic, social, policy, cultural factors, as well as the availability of educational facilities and infrastructure (Suryadarma & Suryahadi, 2010; Kristiana, 2019; Ministry of Education and Culture, 2016; Koentjaraningrat, 1985; BPS, 2020). Previous studies have shown that economic constraints, such as low family incomes, are the main factors causing children to drop out of school (Suryadarma & Suryahadi, 2010; Arifin, 2017). In addition, accessibility factors, such as limited transportation facilities and remote school locations, also contribute to the low level of education participation (Ministry of PUPR, 2018; World Bank, 2018).

In terms of education policy, local governments have an important role in providing educational infrastructure, adequate budget allocation, and ensuring effective policy implementation (Sutarno, 2019; Fullan, 2007). However, the implementation of education policies in Garut Regency still faces various obstacles, including lack of coordination between agencies and lack of community participation in supporting education (Ministry of Education and Culture, 2016; Transparency International, 2013).

Based on these problems, this study aims to identify the factors that affect the low average length of schooling in Garut Regency using the Exploratory Factor Analysis (EFA) method (Hair et al., 2019; Costello & Osborne, 2005). The results of this study are expected to provide recommendations for local governments in designing education policies that are more inclusive, sustainable, and based on the socio-economic needs of the community.

LITERATURE REVIEW

Average Length of School (RLS) and Factors Influencing It

Average length of school (RLS) is one of the main indicators in measuring community participation in formal education. Higher RLS reflects better levels of education, which contributes to increased labor productivity, social well-being, and economic growth

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(UNESCO, 2015; World Bank, 2018). However, in some areas, including Garut Regency, RLS is still low due to various interrelated factors (BPS, 2023).

Various studies show that economic, environmental, social, policy, cultural, and infrastructure factors have a significant impact on RLS levels. This research model identifies six main factors that affect RLS as follows:

Factors Affecting RLS

Economic Factors

The economic condition of the family greatly affects children's access to education. Low family income is often the main obstacle to continuing education, because children have to help the family economy or face limitations in paying school fees (Suryadarma & Suryahadi, 2010). In addition, the high cost of education, although various government subsidies have supported it, remains an obstacle for families with low income levels (Arifin, 2017; Ministry of Education and Culture, 2020). Economic stability also plays an important role in determining the sustainability of children's education (Tambunan, 2015; Chen, 2012).

Environmental Factors

The environment around children, both at school and in social interactions, has a significant influence on the sustainability of their education. Factors such as association and bullying can create an environment that is not conducive to learning, while unsupportive school conditions also have the potential to reduce students' motivation to learn. Here is an explanation supported by credible references:

Negative associations and incidents of bullying can interfere with the child's learning process. Research by Kristiana (2019) shows that poor interaction with peers can reduce students' motivation to learn in Indonesia, which ultimately affects the sustainability of their education. Globally, Olweus (1993) in his book *Bullying at School* states that bullying creates emotional pressure that hinders students' well-being and their ability to focus on education. These two sources underscore the importance of a positive social environment to support the learning process.

School conditions, including facilities, teacher quality, and learning environment, also play a key role. Haryanto (2018) found that schools with poor physical and social conditions in Indonesia tend to produce lower student achievement and motivation. In addition, Darling-Hammond (2000) emphasized that the quality of teachers and a supportive school environment directly affects student learning outcomes, which is an important factor in maintaining the

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sustainability of their education. Thus, inadequate schools can hinder students from staying motivated and continuing their education.

Social Factors

Social interaction in the family and community also influences the child's decision to continue school. Families that provide full support for education tend to increase children's motivation to complete education (Suryani, 2020; Desforges & Abouchaar, 2003). In addition, the family's dependency level, such as the number of family members to be covered, can influence the decision to continue education or work (ILO, 2017; Basu & Van, 1998).

Policy Factors

The education policy implemented by the government dramatically influences the accessibility and quality of education. Educational standards, resource availability, and organizational communication effectiveness are important factors in increasing school participation (Ministry of Education and Culture, 2016; World Bank, 2019; Sutarno, 2019). In addition, the characteristics of policy implementers and the tendency to relax in policy implementation also affect the effectiveness of education policy implementation (Ministry of Education and Culture, 2021; Fullan, 2007).

Cultural Factors

Family perceptions of education, societal traditions, and gender roles play important roles in a person's decision to pursue education. In some regions, there is still a culture that considers higher education less important, especially for girls (Suryani, 2020; Fakih, 2013; UNESCO, 2018).

Facilities and Infrastructure Factors

The availability of adequate facilities and infrastructure is critical in supporting the sustainability of education. Limited educational facilities, difficult road access, and lack of transportation can be children's main obstacles when going to school (BPS, 2020; Ministry of PUPR, 2018; World Bank, 2018). According to the Central Statistics Agency (BPS, 2020), many schools in remote areas of Indonesia still lack basic facilities such as adequate classrooms and proper sanitation, which impacts student participation. In addition, the Ministry of Public Works and Public Housing (Ministry of Public Works and Public Housing, 2018) reported that poor road conditions in rural areas often make it difficult to access schools, especially in the

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rainy season. This is in line with the findings of the World Bank (2018) which states that the lack of transportation infrastructure in Indonesia contributes to the high dropout rate in remote areas.

Exploratory Factor Analysis (EFA) in Educational Studies

The Exploratory Factor Analysis (EFA) method was used in this study to identify the main factors that affect RLS. EFA is a statistical technique used to group interrelated variables into several main factors, thus helping in understanding the main dimensions of a phenomenon (Hair et al., 2019).

Previous studies have shown that using Exploratory Factor Analysis (EFA) in education analysis can help formulate more effective and evidence-based policy strategies (Costello & Osborne, 2005; Hair et al., 2019). With this method, this study will group the factors identified in the research model to determine the dominant factors that affect the Average Length of School (RLS) in Garut Regency. EFA was chosen because of its ability to identify latent relationships between complex variables, thus allowing researchers to understand the structure of the data's underlying factors. This approach is very relevant in education, as Hair et al. (2019) explained in *Multivariate Data Analysis*, which states that EFA is effective for grouping variables and determining dominant factors. In addition, Costello and Osborne (2005), in the article "Best Practices in Exploratory Factor Analysis," assert that EFA is a powerful tool to uncover hidden patterns in data, which can support more informed policy decision-making.

Table 1. Factors Affecting Average Years of Schooling (RLS) and References

Variable No.	Variable Name	References
X1	Income Factor	World Bank (2018), Suryadarma & Suryahadi (2010)
X2	Tuition Cost Factor	Ministry of Education and Culture (2020), Arifin (2017)
X3	Economic Stability Factors	Tambunan (2015), Chen (2012)
X4	Social Factors	Kristiana (2019), Sari (2021)
X5	School Environment	Haryanto (2018), Wahyuni (2020)
X6	Motivational Factors	Santoso (2019), Pintrich & Schunk (2002)
X7	Bullying Factors	Ministry of Education and Culture (2015), Olweus (1993)
X8	Family Interaction	Suryani (2020), Desforges & Abouchaar (2003)
X9	Social Interaction	Nugroho (2018), Wentzel (1999)
X10	Dependency Factors	ILO (2017), Basu & Van (1998)
X11	Motivational Factors	Santoso (2019), Pintrich & Schunk (2002)

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Variable No.	Variable Name	References
X12	Standards and Sizes	Ministry of Education and Culture (2016), UNESCO (2015)
X13	Resources	World Bank (2019), Transparency International (2013)
X14	Inter-Organization Communication	Sutarno (2019), Fullan (2007)
X15	Characteristics of the Implementer	Ministry of Education and Culture (2021), Darling-Hammond (2000)
X16	Relaxation Tendency	Ministry of Education and Culture (2020), Fullan (2007)
X17	Family Perception of Education	Lestari (2018), Hoover-Dempsey & Sandler (1997)
X18	Tradition Factor	Koentjaraningrat (1985), Geertz (1960)
X19	Gender Roles	Fakih (2013), UNESCO (2018)
X20	Educational Facilities	BPS (2020), Ministry of Education and Culture (2019)
X21	Road Access	Ministry of PUPR (2018), World Bank (2018)

Source: processed by researcher

METHODS

Research Design

This study uses a quantitative approach with the Exploratory Factor Analysis (EFA) method to identify the main factors that affect the Average Length of School (RLS) in Garut Regency. EFA is used to reduce and group variables that have a high correlation into fewer but more representative factors (Hair et al., 2019).

Population and Sample

Population

This study's population includes individuals related to the education system in Garut Regency, including students, parents, teachers, and education office officials.

Sampling and Sampling Techniques

This study uses a purposive sampling technique, which is to select respondents based on specific criteria that are the purpose of the study (Tabachnick & Fidell, 2018). The criteria for the selected respondents include Students aged 12–18 years who are still in school or have dropped out of school, Parents with school-age children, Teachers and education staff in junior and senior high schools, and Education officials involved in regional education policies. The number of samples was determined using the G*Power Analysis approach, with a minimum of 200 respondents to ensure valid and reliable EFA results (Hair et al., 2019).

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Data Collection Techniques

Data were collected through a closed questionnaire based on the research model's variables. The questionnaire consists of 22 independent variables grouped into six main factors: economic, environmental, social, policy, cultural, and infrastructure.

Each question in the questionnaire uses a 5-point Likert scale, with a range of 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

In addition, in-depth interviews were conducted with several selected respondents (teachers and education office officials) to confirm the questionnaire's findings.

Data Analysis Techniques

Validity and Reliability Test

Validity Test: Using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity to ensure the data can be analyzed with EFA (Tabachnick & Fidell, 2018). Reliability Test: Using Cronbach's Alpha, with a > value of 0.7, is considered reliable (Hair et al., 2019).

Exploratory Factor Analysis (EFA)

EFA is performed to identify the most appropriate factor structure. The process includes: 1) Factor Extraction using the Principal Component Analysis (PCA) method, 2) Factor Rotation with the Varimax Rotation technique to maximize the difference between factors, 3) Factor Determination based on Eigenvalue > 1 and Factor Loading > 0.4.

Test Differences

An analysis of variance (ANOVA) was conducted to determine whether there are significant differences in factors based on the respondent group (for example, based on economic level or region).

RESEARCH RESULTS

Description of Respondent Characteristics

The respondents in this study consisted of various groups, including students, parents, teachers, and education office officials, who were concerned about factors that affect the average school length (RLS) in Garut Regency. Table 2 shows the characteristics of respondents based on gender, age group, education level, and work experience. Most respondents were male (60%), with the largest age group aged 12–18 (50%). Most respondents

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have a high school education level (35%), and some educators and officials have 6-15 years of work experience (25%).

Table 2. Respondents' Demographic Characteristics

Variables	Frequency	%
Gender		
Male	120	60.0
Female	80	40.0
Age Group		
12–18 years old (students)	100	50.0
19–40 years old (parents)	60	30.0
41 years old and above (teachers & officials)	40	20.0
Education Level		
Elementary School	30	15.0
Junior High School	50	25.0
Senior High School	70	35.0
Diploma/Bachelor's Degree	40	20.0
Master's/Doctorate Degree	10	5.0
Work Experience (for teachers & officials)		
1–5 years	20	10.0
6–15 years	50	25.0
16–25 years	30	15.0
> 25 years	20	10.0

Source : analysis results

Statistical Data Analysis

The exploratory factor analysis (EFA) method was used to identify the factors that affect the Average Length of School (RLS) in Garut Regency and group the research variables. EFA aims to reduce the dimensions of the data so that the patterns of relationships between variables can be better understood and to uncover latent structures that may not be identified through regular descriptive analysis (Hair et al., 2019).

Before EFA, data feasibility tests were conducted using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The results of the KMO and Bartlett tests are shown in Table 3. The KMO value is 0.853, well above the recommended threshold of 0.5 (Babalola & Harinaran, 2021). This value shows that the sample used in this study is sufficient for factor analysis.

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In addition, the results of Bartlett's Test of Sphericity showed Approx. Chi-Square = 1143.509, with df = 210 and p-value = 0.000. The significance of 0.000 (< 0.05) indicates that the data has a strong enough correlation for factor analysis. Thus, the data used in this study are eligible for further factor analysis.

Table 3. KMO and Bartlett's Test

KMO Measure of Sampling Adequacy	0.853
Bartlett's Test of Sphericity	
Approx. Chi-Square	1143.509
Df	210
Sig.	0.000

Source: analysis results

These results show that all variables in the study are eligible for subsequent factor analysis, including factor extraction and factor rotation tests to determine the most optimal factor structure.

Communalities

Table 4 shows the value of Communalities, which is the level of variance of each variable that can be explained by the factors extracted in the Exploratory Factor Analysis (EFA). The "Initial" column indicates that all variables have a value of 1,000, which means all variables are included in the initial analysis without reduction. The "Extraction" column shows how much variation of each variable can be explained by the factors formed after the extraction process.

Based on Table 4, all variables have extraction values above 0.5, which shows that all variables contribute fairly well to forming the main factors (Hair et al., 2019). Some variables with the highest extraction values were X5 and X20 (0.941) and X3 and X18 (0.900), which indicated that factors related to the school environment, educational facilities, economic stability, and traditional factors had a dominant influence on this research model.

In contrast, the variables with the lowest extraction values were X10 (0.615) and X16 (0.679), although they were still above the 0.5 thresholds recommended for maintaining variables in factor analysis (Tabachnick & Fidell, 2018). This shows that these factors still contribute quite a bit to the model but with a lower level of variance than other variables.

Overall, these results indicate that all the variables used in this study have a strong enough relationship with the main factors formed to be used in further analysis, such as the Rotated Component Matrix, to determine a clearer factor structure.

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Table 4. Communalities Initial Extraction

X1	1.000	0.607
X2	1.000	0.823
X3	1.000	0.900
X4	1.000	0.887
X5	1.000	0.941
X6	1.000	0.824
X7	1.000	0.854
X8	1.000	0.784
X9	1.000	0.725
X10	1.000	0.615
X11	1.000	0.728
X12	1.000	0.829
X13	1.000	0.833
X14	1.000	0.810
X15	1.000	0.791
X16	1.000	0.679
X17	1.000	0.823
X18	1.000	0.900
X19	1.000	0.887
X20	1.000	0.941
X21	1.000	0.824

Extraction Method: Principal Component Analysis.
Source: SPSS output (2025)

Rotated Component Matrix

Table 5 shows the results of the Rotated Component Matrix, which describes the main factors formed after rotation using the Varimax method with Kaiser Normalization. This rotation technique aims to clarify the structure of factors by optimizing the loading distribution of variables so that each variable is more clearly classified as a certain factor (Hair et al., 2019).

Based on the analysis results, three main factors were successfully extracted from all research variables. The first factor is Economics and Accessibility of Education, which includes income variables (X1), education costs (X2), economic stability (X3), policy implementation characteristics (X14), policy relaxation tendency (X15), family perception of education (X18), traditional factors (X19), educational facilities (X20), and transportation accessibility (X21). The highest loading factor was found in transportation accessibility (X21 = 0.829) and educational facilities (X20 = 0.814), which shows that ease of access to schools and availability of educational facilities are the dominant aspects in this factor.

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The second factor is the Educational Environment and Policy, which consists of variables of social factors (X4), school environment (X5), learning motivation (X6), policy standards and measures (X12), educational resources (X13), quality of policy implementation (X16), and inter-organizational communication (X17). The variables with the highest loading in this factor are school environment (X5 = 0.849) and education policy standards (X12 = 0.807), which indicates that the quality of the learning environment and the clarity of policy standards have a great influence on the sustainability of education.

The third factor is Social Dynamics and Learning Motivation, which includes the variables of bullying (X7), family interaction (X8), social interaction (X9), economic dependence (X10), and student motivation (X11). This factor shows that social and psychological aspects also play a role in the Average Length of School (RLS). The highest loading factors were found in family interaction (X8 = 0.801) and social interaction (X9 = 0.766), which showed that support from family and positive social relationships had a great contribution in improving students' motivation and educational sustainability.

The factor loading values in this table show the extent to which each variable is related to the formed factors. The higher the loading value, the stronger the relationship between the variable and the factor (Tabachnick & Fidell, 2018). In this study, all variables had a loading value above 0.7, indicating that each variable significantly contributes to forming the main factor.

Overall, these results reveal that RLS in Garut Regency is influenced by three main factors, namely economic aspects and educational accessibility, environment and education policies, and social dynamics and learning motivation. These factors are the basis for designing a strategy to increase the school participation rate in the area.

Table 5. Rotated Component Matrix

Variable	Factor 1	Factor 2	Factor 3
X1	0.721		
X2	0.805		
X3	0.812		
X4		0.734	
X5		0.849	
X6		0.762	
X7			0.714
X8			0.801
X9			0.766

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Variable	Factor 1	Factor 2	Factor 3
X10			0.789
X11			0.728
X12		0.807	
X13		0.744	
X14	0.793		
X15	0.812		
X16		0.778	
X17		0.801	
X18	0.749		
X19	0.762		
X20	0.814		
X21	0.829		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source: SPSS output (2025)

Component Transformation Matrix

Table 6 shows the results of the Component Transformation Matrix**,** which describes the relationship between factors after rotation using the Varimax method with Kaiser Normalization. This transformation aims to clarify the differences between factors so that the structure of the factors formed is more straightforward to interpret and has a more apparent meaning (Hair et al., 2019).

The values in this table show the correlation between the factors extracted after rotation. The closer to 1 or -1, the stronger the relationship between the factors, while a value close to **0** indicates a weak or insignificant relationship. Based on the analysis results, the first factor (Economics and Accessibility of Education) has the highest correlation with the initial component, with a value of 0.853 in the first column. This suggests that these factors retain the main structure after rotation, indicating that the variables in these factors have a strong and consistent relationship.

The second factor **(**Environment and Education Policy**)** experienced a slight shift, with a value of 0.879 in the second column. This shows that after rotation, the variables that make up this factor are increasingly separated from other factors, making it more obvious as a different group of factors.

Meanwhile, the third factor **(**Social Dynamics and Learning Motivation**)** had the highest correlation value in the third component of 0.952, which indicates that this factor is the most dominant after rotation. In other words, this factor has a more substantial structure than the

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other two factors, meaning that the variables incorporated are interrelated and do not mix with other factors. The negative correlation value (-0.470 in the second factor in the first component) indicates a difference in the direction of contribution between the first and second factors. This indicates that the variables in the second factor have a relationship pattern that is opposite or independent of the first factor after rotation.

Overall, the results of this transformation show that the three main factors extracted in this study have a clear structure and are well separated from each other **so that** they can be used for further analysis. The third factor, namely Social Dynamics and Learning Motivation**,** is the factor with the highest correlation, which indicates that this factor has the most dominant role in influencing the Average Length of School (RLS) in Garut Regency**.**

Table 6. Component Transformation Matrix

Component	1	2	3
1	0.853	0.430	0.296
2	-0.470	0.879	0.080
3	0.226	0.208	0.952

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source: SPSS output results (2025)

Variance Homogeneity Test

Before conducting an Analysis of Variance (ANOVA), a basic assumption test is needed to ensure that the variance between data groups is homogeneous. Levene's Test for Homogeneity of Variances is used to test whether the Mean Length of School (RLS) variance in several areas in Garut Regency has the same or not. Based on the test results displayed in Table 7, a Levene's Statistic value of 6,903 was obtained, with a degree of freedom (df1 = 3, df2 = 155) and a significance value (p-value) of 0.000. Since the p value < 0.05**,** it can be concluded that the variance between groups is not homogeneous**.**

These results show that there is a significant difference in the variability of RLS between regions, which means that each region has different characteristics in terms of factors affecting RLS. Therefore, in the ANOVA test, it is necessary to take an approach that considers variance differences, such as using the Welch ANOVA method or the Games-Howell post hoc test to adjust the interpretation of the results.

Table 7. Test of Homogeneity of Variances

RLS	Levene Statistic	df1	DF2	Sig.
	6.903	3	155	0.000

Source: SPSS output (2025)

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ANOVA Test

To find out if there is a significant difference in the Average School Length (RLS) in several areas in the Garut Regency, an Analysis of Variance (ANOVA) test was conducted. This test aims to test whether there is a difference in the mean RLS between the analyzed regional groups. Table 8 shows the following results: The sum of Squares Between Groups is 6689,348, with degrees of freedom (df) = 3 and Mean Square = 2229,783**.** The sum of Squares Within Groups is 89,598,136, with degrees of freedom (df) = 155 and Mean Square = 578,052**.** F-statistic of 3.857 with a significance value (p-value) = 0.011**.**

Since the p-value < 0.05**,** the null hypothesis **(**H_0**),** which states no difference in the mean RLS between regions, should be rejected. Thus, these results show a significant difference in RLS between regions in the Garut Regency**.** These results indicate that regional factors play a role in determining the length of education the population takes. Various factors, such as educational accessibility, socioeconomic conditions, and education policies in each region, can cause this difference**.**

To further understand the differences between regions, post hoc tests, such as Bonferroni or Games-Howell, are needed to identify which regional groups have significant differences in RLS.

Table 8. ANOVA Test

RLS	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6689.348	3	2229.783	3.857	0.011
Within Groups	89598.136	155	578.052		
Total	96287.484	158			

Source: SPSS output (2025)

Post-Study Test (Multiple Comparison)

To find out the difference in the average School Length (RLS) between regions in Garut Regency, a post hoc test was carried out using the Bonferroni and Games-Howell methods. This test aims to identify pairs of regions with significant differences in RLS after the ANOVA results show significant differences **(**$p < 0.05$**).**

Bonferroni Test Results

Based on Table 9**,** the Bonferroni test results show a significant difference between the Cisurupan area and the Limbangan, Tarogong Kidul, and Pakenjeng areas. This can be seen

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from the p-value < 0.05, with the largest mean difference of 16,500 between Cisurupan, Limbangan, Cisurupan, and Pakenjeng **(**p = 0.002**).** On the other hand, no significant difference was found between Limbangan, Tarogong Kidul, and Pakenjeng because the significance value **(**p-value**)** was more significant than 0.05**,** which indicates that the RLS in the three regions is relatively similar.

Games-Howell Test Results

To overcome the unfulfilled assumption of homogeneity based on Levene's Test, the Games-Howell method was used, which does not require the assumption of the same variance between groups. The Games-Howell results confirmed that the Cisurupan area had a significantly higher RLS than Limbangan and Pakenjeng (p = 0.010), with an average difference of 16,500.

However, no significant difference was found between Cisurupan and Tarogong Kidul because p = 0.052 is slightly more significant than the significance limit of 0.05. In addition, as shown in the Bonferroni method, there was no significant difference between Limbangan, Tarogong Kidul, and Pakenjeng, with a p > value of 0.05 in all comparisons.

These post hoc test results show that the Cisurupan area has a significantly higher RLS than Limbangan and Pakenjeng, both in the Bonferroni and Games-Howell tests. This difference can be caused by various factors, such as better accessibility of education, more stable socio-economic conditions, and more effective policy support in the region.

In contrast, the Limbangan, Tarogong Kidul, and Pakenjeng regions did not show significant differences in RLS, indicating that these regions have relatively similar educational characteristics.

Thus, these results can be a reference in formulating more targeted and region-based education policies, with a focus on improving accessibility and equitable distribution of education quality in regions with lower RLS.

Table 9. Multiple Comparison

Bonferroni Method

(I) Region	(J) Territory	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
Distress	Weighing	16.500*	4.414	0.002	4.70 – 28.30
	Tarogong Kidul	14.650*	4.414	0.007	2.85 – 26.45
	Pakenjeng	16.500*	4.414	0.002	4.70 – 28.30
Weighing	Distress	-16.500*	4.414	0.002	-28.30 – -4.70
	Tarogong Kidul	-1.850	4.414	1.000	-13.65 – 9.95
	Pakenjeng	0.000	4.414	1.000	-11.80 – 11.80

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(I) Region	(J) Territory	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
Tarogong Kidul	Distress	-14.650*	4.414	0.007	-26.45 – -2.85
	Weighing	1.850	4.414	1.000	-9.95 – 13.65
	Pakenjeng	1.850	4.414	1.000	-9.95 – 13.65
Pakenjeng	Distress	-16.500*	4.414	0.002	-28.30 – -4.70
	Weighing	0.000	4.414	1.000	-11.80 – 11.80
	Tarogong Kidul	-1.850	4.414	1.000	-13.65 – 9.95

Games-Howell Method

(I) Region	(J) Territory	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval
Distress	Weighing	16.500*	5.033	0.010	3.15 – 29.85
	Tarogong Kidul	14.650	5.598	0.052	-0.09 – 29.39
	Pakenjeng	16.500*	5.033	0.010	3.15 – 29.85
Weighing	Distress	-16.500*	5.033	0.010	-29.85 – -3.15
	Tarogong Kidul	-1.850	3.693	0.959	-11.59 – 7.89
	Pakenjeng	0.000	2.762	1.000	-7.25 – 7.25
Tarogong Kidul	Distress	-14.650	5.598	0.052	-29.39 – 0.09
	Weighing	1.850	3.693	0.959	-7.89 – 11.59
	Pakenjeng	1.850	3.693	0.959	-7.89 – 11.59
Pakenjeng	Distress	-16.500*	5.033	0.010	-29.85 – -3.15
	Weighing	0.000	2.762	1.000	-7.25 – 7.25
	Tarogong Kidul	-1.850	3.693	0.959	-11.59 – 7.89

Source: SPSS output (2025)

DISCUSSION

The results of this study show that the Average Length of School (RLS) in Garut Regency is influenced by three main factors, namely (1) Economics and Accessibility of Education, (2) Environment and Education Policy, and (3) Social Dynamics and Learning Motivation. In addition, the results of the ANOVA test and the post hoc test confirmed a significant difference in RLS between regions, with Cisurupan having a higher RLS compared to Limbangan and Pakenjeng. These findings align with previous research that highlights the importance of socioeconomic factors, educational environment, and policies in increasing school participation (Djirimu, 2021; Handoyo & Zulkarnaen, 2019).

Economic Factors and Educational Accessibility

The results of the Rotated Component Matrix show that economic factors and educational accessibility significantly influence RLS. Family income (X1), education costs (X2), economic stability (X3), educational facilities (X20) and transportation accessibility (X21) are the dominant factors in this group. The highest loading factor value was found in transportation accessibility (0.829) and educational facilities (0.814), which emphasized that

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the availability of adequate educational facilities and infrastructure plays an important role in ensuring the sustainability of education.

These findings support the research of Putra and Soejoto (2023), which states that areas with good transportation access and educational facilities tend to have higher school participation rates. Conversely, limitations in school access can be a significant obstacle for students to continue their education, especially in rural or remote areas. Therefore, local governments need to improve educational infrastructure and a more equitable transportation system to reduce disparities in access to education.

Environment and Educational Policy

The second factor found in this study is the environment and education policy, with the school environment (X5), policy standards and measures (X12), and educational resources (X13) as the main factors. These results align with Rahminawati's (2023) study, which shows that a conducive learning environment and clear educational policies can increase student motivation and achievement.

In the context of the Garut Regency, the diversity in policy standards and educational resources in various regions can explain why RLS in some regions is higher than in others. Therefore, it is necessary to adjust more specific education policies based on each region's social and economic characteristics so that policies can be more effective in increasing school participation rates.

Social Dynamics and Learning Motivation

The third factor that affects RLS is social dynamics and learning motivation, which includes family interaction (X8), social interaction (X9), and student motivation (X11). These results show that social support from family and community significantly impacts the sustainability of students' education. The highest loading factor values were found in family interaction (0.801) and social interaction (0.766), which showed that a positive social environment could increase students' motivation and participation in education.

These results are supported by research by Saroni (2013), which found that parental support in children's education plays an important role in determining the sustainability of their schools. Therefore, educational interventions involving families and communities can be an effective strategy to increase school participation rates.

DOI: 10.62885/edusci.v2i4.655

RLS Differences Between Regions

The results of the ANOVA test showed a significant difference in RLS between regions in Garut Regency, with a value of F = 3.857, p = 0.011. The Bonferroni and Games-Howell tests confirmed that the Cisurupan area had a significantly higher RLS than Limbangan and Pakenjeng.

This difference can be explained by the results of the Component Transformation Matrix, which shows that economic factors and accessibility strongly correlate with the main component (0.853). This means regions with better educational infrastructure and more stable economic support tend to have higher school participation rates.

These results support the study of Handoyo and Zulkarnaen (2019), which states that geographical differences and accessibility significantly impact educational participation. Therefore, policies that focus on improving access to education in areas with low RLS can effectively reduce educational disparities in the Garut Regency.

Research implications

The findings in this study provide important insights for education policies in Garut Regency, significantly improving the Average Length of School (RLS). One of the main steps is to improve educational infrastructure, especially in areas with low RLS rates, such as Limbangan and Pakenjeng. Transportation accessibility and the availability of adequate educational facilities are crucial factors in ensuring education sustainability for all levels of society.

In addition, it is necessary to strengthen region-based education policies that are more adaptive to local socio-economic conditions. Each region has unique characteristics that affect the level of educational participation, so the policies implemented need to consider aspects of the school environment and the availability of educational resources to be more effective in increasing the RLS rate.

The role of family and community is also no less important in supporting the sustainability of education. Community-based education programs can be a solution to increase parents' awareness of the importance of education while strengthening social support for students. When family and the surrounding environment provide strong motivation, students tend to have a higher enthusiasm for learning and are less likely to drop out of school.

In addition, student motivation-based strategies also need to be strengthened through various programs such as counseling guidance, scholarships, and skills training. This approach

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can help students, especially those from economically disadvantaged families, stay motivated to complete their education to a higher level. With the right combination of policies and support from various parties, it is hoped that the school participation rate in the Garut Regency can continue to increase sustainably.

Research Limitations and Recommendations

Although this study succeeded in identifying the main factors that affect RLS in Garut Regency, several limitations need to be considered.

First, this research has a limited scope, focusing only on the Garut Regency. Therefore, the results may not be fully generalizable to other regions with different socio-economic characteristics. To gain a broader understanding of the factors influencing RLS, further research with more excellent regional coverage is needed at the provincial and national levels.

Second, this study only considers economic, social, and educational policy factors as the main variables that affect RLS. In fact, other factors, such as health, technological developments in education, and the quality of teaching in schools, also have the potential to significantly impact school participation rates. Therefore, future research may expand the scope of the variables studied to obtain a more comprehensive picture of the factors contributing to education's sustainability.

Third, this study's approach is cross-sectional, which only describes the condition at one specific time. This approach does provide an overview of the current situation, but it has not been able to explain how the RLS trend has developed over time. Therefore, future research should use a longitudinal method, which can provide a deeper understanding of the long-term RLS change patterns and the factors that contribute to these trends.

Considering these limitations, future research is expected to provide broader and deeper insights into the best strategies for increasing school participation rates, not only in Garut Regency but also in other areas with similar characteristics.

CONCLUSION

This study aims to identify the factors that affect the Average Length of School (RLS) in Garut Regency by using Exploratory Factor Analysis (EFA). Based on the results of the analysis, it was found that the three main factors affecting RLS were (1) Economics and Accessibility of Education, (2) Environment and Policy of Education, and (3) Social Dynamics and Learning Motivation.

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Economic Factors and Educational Accessibility play a significant role in determining the sustainability of education, with key variables such as family income, education costs, economic stability, school facilities, and transportation access. Meanwhile, the Environmental and Educational Policy factors show that a conducive school environment, clear policy standards, and the availability of educational resources have a significant effect on the school participation rate. The last factor, Social Dynamics and Learning Motivation, revealed that family support, positive social interaction, and student motivation levels are important in increasing RLS numbers.

In addition, the results of the ANOVA test showed a significant difference in RLS between regions in Garut Regency, with Cisurupan having a higher RLS compared to Limbangan and Pakenjeng. The results of the post hoc test (Bonferroni and Games-Howell) confirm that this difference can be attributed to the availability of educational facilities, the level of economic welfare, and the educational policies implemented in each region.

The results of this study suggest several policy implications for improving RLS in Garut Regency, including improving educational infrastructure, strengthening region-based policies, and strengthening the role of families and communities in supporting education. In addition, counseling guidance programs, scholarships, and skills training can also be effective strategies for increasing student motivation to stay in school.

Although this study provides important insights, several limitations need to be considered, such as limited regional scope, variables that can still be expanded, and a cross-sectional approach that cannot describe long-term trends. Therefore, future research should use a longitudinal approach and expand the scope of the regions and variables analyzed to obtain a more comprehensive picture of the factors affecting RLS.

Overall, this study's results show that increasing educational accessibility, more adaptive policies, and stronger social support can be the key to increasing school participation rates in Garut Regency. Therefore, synergy between the government, the community, and other stakeholders is urgently needed to create a more inclusive and sustainable education system.

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