

Chapter Five

Background Factors Influencing the Learning Achievement of Grade Four Pupils

5.0 Introduction

Identifying the main background factors that influence the learning achievement of primary school children in Sri Lanka, has been one of the main objectives of the National Study on Assessment of Achievement at Completion of Grade 04. Based on research evidence from national and international studies, background factors have been categorized under three broad themes:

- Home background;
- School background;
- and
- Student background.

The objective of this categorisation was to adopt a more systematic and meaningful approach in questionnaire design and data collection. In addition, it enables data analysis procedures to be based on a widely accepted conceptual framework, resulting in more meaningful analysis. Drawing on the experiences of the UNESCO – UNICEF (Joint) Monitoring Learning Achievement Project (1992-1994) and many other international surveys, it was decided to adopt the LISERAL model for the purpose of the present analysis. The LISERAL method makes it possible to estimate the relative influence of the variables. The latent variables in the model are made up of several predictor variables arrived at using factor analysis.

*LISERAL Model
the statistical method used
to examine the effects of
predictor variables..... a
linear structural equation
model for latent variables.*

-V. Chinapah-

5.1 Collection of Data Related to the Three Main Background Factors

5.1.1 Home Background

Five questionnaires were used to collect necessary data from parents, principals, sectional heads, teachers and students. Figure 5.1 shows in detail how the total concept of “Home Background” was conceptualized at the stage of questionnaire design.

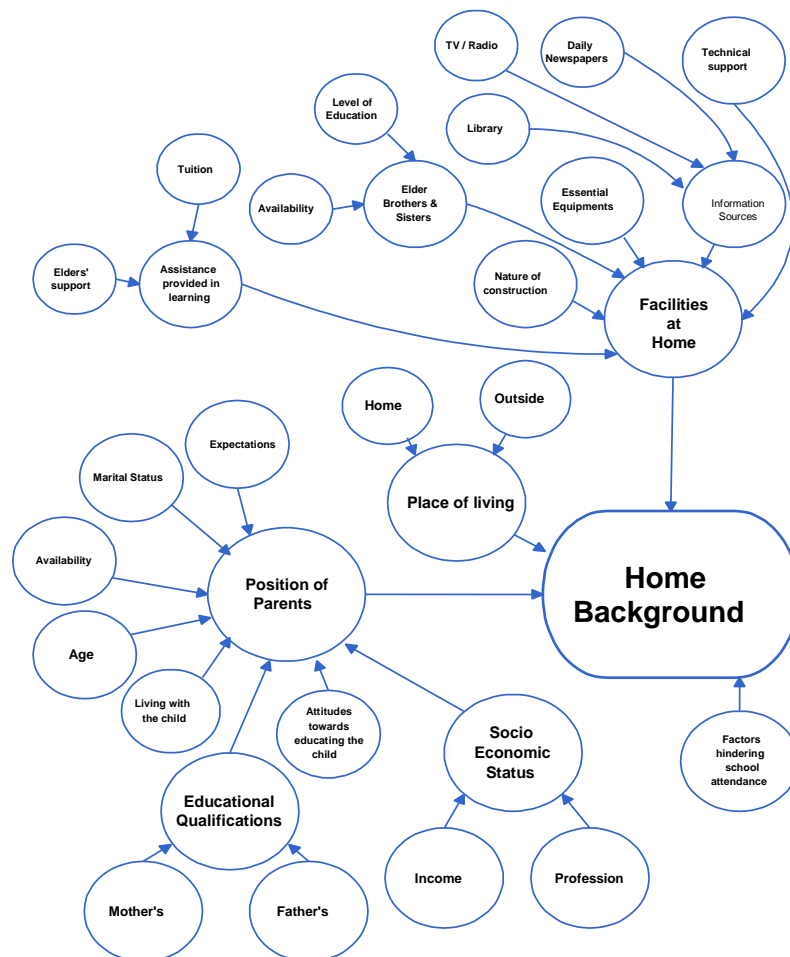


Figure 5.1 Assumed Structure of the Variables Influencing Home Background

In Figure 5.1 it is evident that at the stage of questionnaire design the emphasis was on the four main variables, facilities at home, position of parents, place of living and factors influencing school attendance. All questions have been designed to gather information that could enrich understanding the nature of the influence of these composites, on student achievement.

5.1.2 School Background

The same approach was used in designing the questionnaires to gather information on school climate. Figure 5.2 indicates the school background factors on which data was collected.

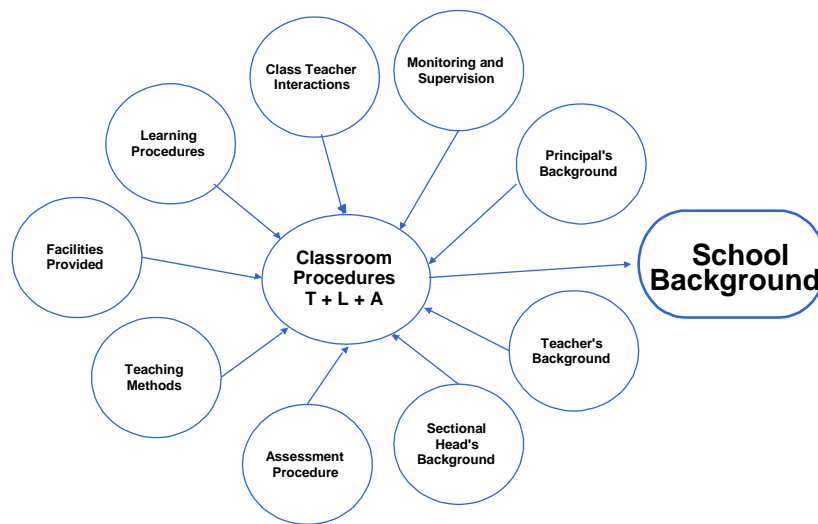


Figure 5.2: Assumed Structure of the Variables Influencing School Background

The main factors and activities contributing to the total process of teaching, learning and assessment at school level were considered. Nine variables that include the principal, sectional head, teachers, facilities and other interactive procedures within the school, specially in the classroom, were treated as important at the stage of questionnaire construction and data collecting.

5.1.3 Student Background

Student background data were collected with the intention of identifying related variables that influence student learning. Environmental support, additional support in learning activities, pre-school education, and interests of the students were some of the more important factors identified in relation to student background.

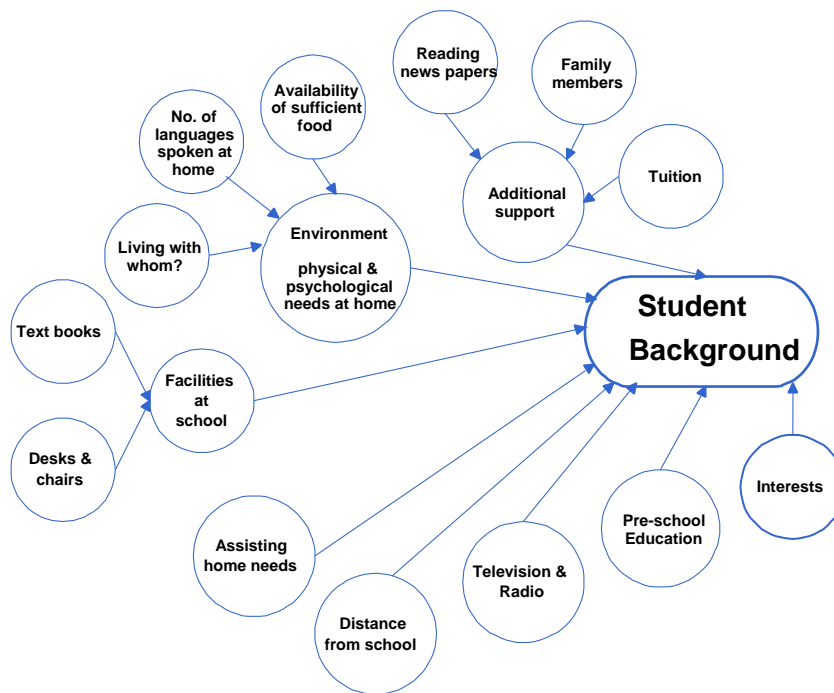


Figure 5.3: Assumed Structure of the Variables Influencing Student Background

It is evident from Figure 5.3 that at the stage of questionnaire designing, the interactive nature of the variables was taken into consideration.

5.2 Identifying common underlying constructs (Latent Variables)

Factor analysis was done, utilising the data collected through questionnaires. This resulted in reducing the multiplicity of data or measures, to a few common underlying constructs or factors. These constructs may be called latent variables.

Factor Analysis is used to identify unities and commonalities among different variables, forming a factor or number of factors

- V. Chinapah-

The latent variables identified in relation to home background are set out in detail in Figure 5.4

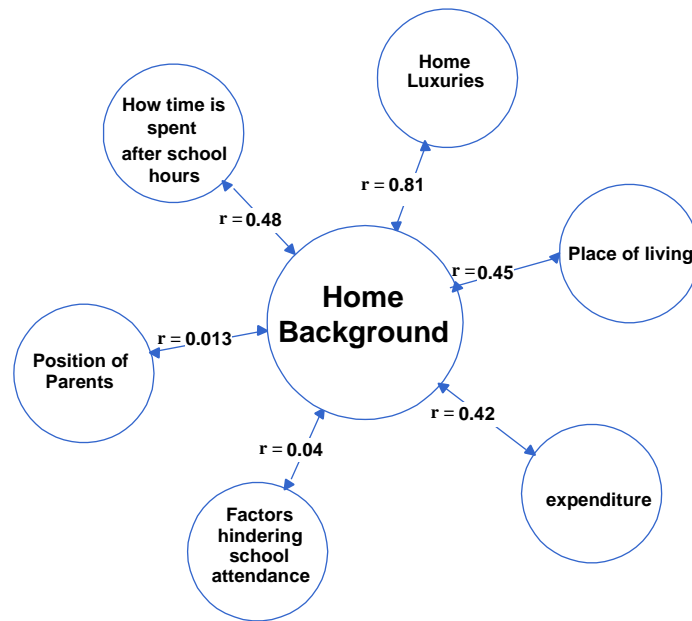


Figure 5.4: Latent Variables Related to Home Background

As is evident in the correlation values given in Figure 5.4, the most influential variables identified as related to home background are facilities at home, how after school hours are spent, place of living, meeting expenses, factors hindering school attendance and position of parents. It is seen that the facilities available at home lead to a more favourable home background for students, facilitating learning and higher learning achievement. The next important factor is how the child spends his time after the school hours. The behavioural patterns of the child have to be guided by the parents, to suit his learning needs. The capacity of the parents to spend money on various quality inputs and opportunities provided to students, plays a key role in providing a favourable home background that leads to higher academic success. The place where the child lives is very important, in conducting his studies successfully. Two other factors, position of parents and factors hindering school attendance also influence the child in his activities.

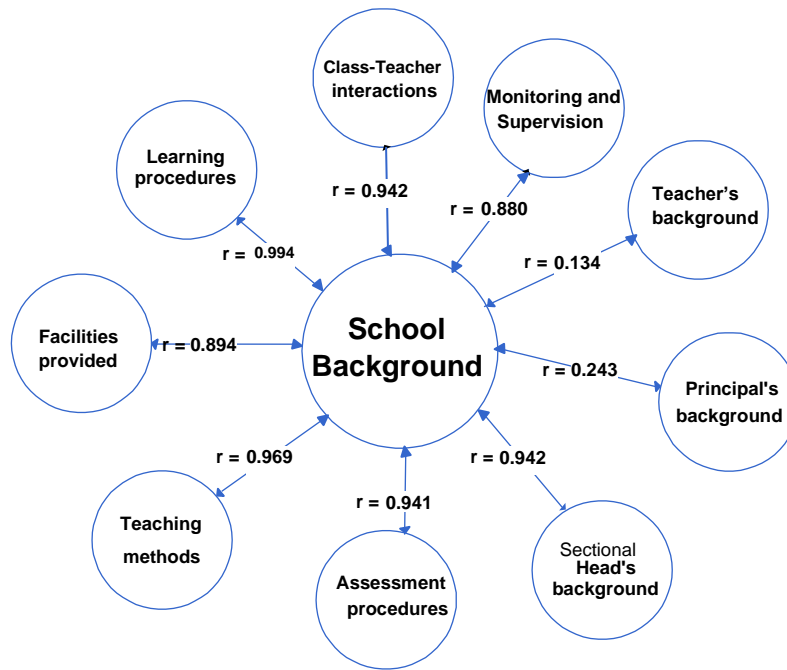


Figure 5.5: Latent Variables Related to School Background

Figure 5.5 shows the variables that are related to school background. Six very important variables that influence school background are presented in Figure 5.5. The correlation between the school background and variables identified range from 0.880 to 0.994. The nature of the learning processes in the classroom matter considerably in providing an enabling classroom climate that leads to better learning. Appropriate learning-teaching methods have to be adopted to achieve that target. The efficiency of the sectional head contributes to the successful implementation of better teaching and learning procedures in the classroom. He/she has to effectively guide classroom teaching. Assessments have to be designed and conducted to identify strengths and weaknesses of students and teachers. Necessary feedback has to be provided, to improve the quality of classroom practices. All these have to be supplemented by provision of necessary facilities, for both teachers and students. In addition, Figure 5.5 shows that the background of the principal also plays a dominant role in moulding the school background. He is both the institutional and managerial leader of the school.

Variables identified as important in moulding the students' background are shown in Figure 5.6

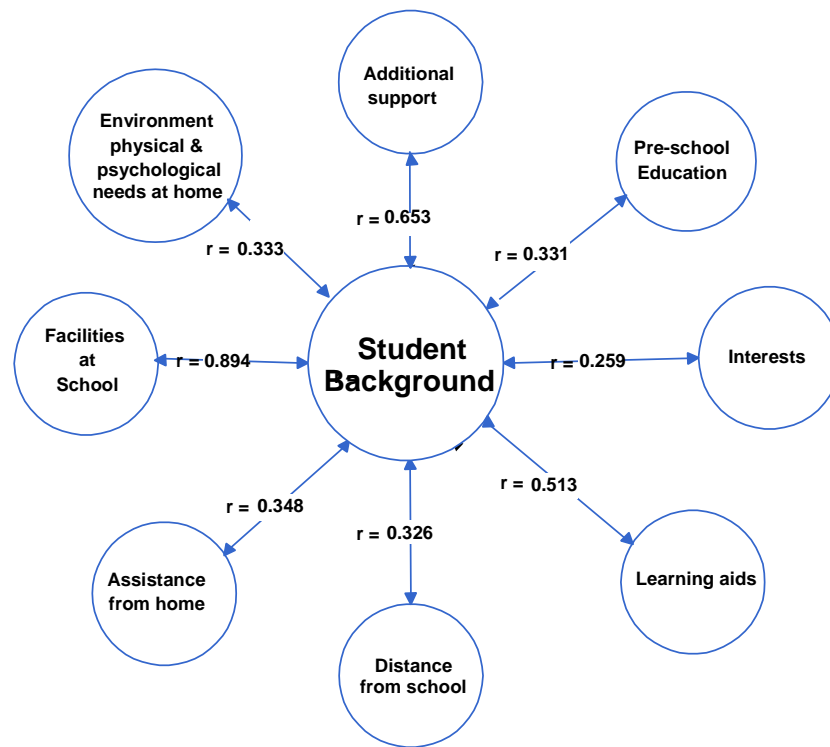


Figure 5.6: Latent Variables Related to Student Background

Out of the eight variables identified, additional support given to the student by persons other than the teacher in the classroom seems to be the most important. Learning aids also exert a great influence. Pre- school education enriches the student background and leads to his successful involvement in learning activities. Meeting the physical and psychological needs of the students contributes to build up a healthy environment for the activities of the student at home. Living with parents, having sufficient food, language spoken at home are the main factors related to this healthy environment. Assistance given and facilities provided at home make the student background stronger and healthier. The interest developed within a child is of considerable importance in motivating the child to engage in learning activities. These eight variables, and interactive relationships, facilitate the enrichment of the student background, and provide the necessary environment for effective learning.

5.3 Other Inter-related Variables

The primary variables identified are not self-contained. They inter-relate with many other variables. Some of these variables related to home background are given in Table 5.1

Table 5.1: Some of the variables that inter-relate with home background

Primary Variables	Inter-related Variables	Correlation
1. Facilities at home	* Expenditure	0.756
	* Factors hindering school attendance	0.626
	* Position of parents	0.467
	* Place of living	0.168
2. Place of living	* Position of parents	0.444
	* Expenditure	0.432
	* Factors hindering school attendance	0.312
	* Facilities at home	0.168
3. How time is spent after school hours	* Position of parents	0.521
	* Place of living	0.435
	* Expenditure	0.321
4. Position of parents	* Expenditure	0.567
	* How time is spent after school hours	0.521
	* Facilities at home	0.467
	* Place of living	0.444
5. Expenditure	* Facilities at home	0.756
	* Position of parents	0.567
	* How time is spent after school hours	0.321
	* Place of living	0.168
	* Factors hindering school attendance	0.132
6. Factors hindering school attendance	* Facilities at home	0.626
	* Place of living	0.312
	* Expenditure	0.132

According to the data in Table 5.1 the ability to spend extra money for equipment, transport, books, sports equipment, library membership, shoes, etc. seems to be influential factors. The place of living is also important, whether this place is in an urban or rural area, his own home or other, and whether the location is conducive to learning. The position of parents refers to their availability, marital status, whether they are living with the child, educational background, attitude towards the child's education, socio-economic status etc. Factors hindering school attendance are the inability to spend money, excessive work at home, no responsible elders at home etc. Time spent after school hours indicates whether the student is involved in his educational activities or other activities related to family work or in income generation. Facilities at home may depend on the nature of the construction of the house and many other items available at home for the use of the family members.

The variables that inter-relate with and enrich the main variables related to school background were studied and are given in Table 5.2. The correlations between the primary variable and inter-related variables are also shown in this table.

Table 5.2: Some of the Variables that Inter-relate with School Background

Primary Variables	Inter-related Variables	Correlation
1. Sectional Head	* Class teacher's interactions	0.998
	* Assessment procedures	0.997
	* Learning process	0.995
	* Teaching methods	0.967
	* Monitoring & supervision	0.892
	* Facilities provided	0.802
2. Teacher's background	* Facilities provided	0.591
	* Teaching methods	0.242
3. Assessment procedures	* Class teacher's interactions	0.998
	* Sectional Head	0.997
	* Learning process	0.995
	* Teaching methods	0.966
	* Monitoring & supervision	0.892
	* Facilities provided	0.802
4. Teaching methods	* Learning process	0.969
	* Class teacher's interaction	0.968
	* Assessment procedure	0.966
	* Facilities provided	0.925
	* Monitoring & supervision	0.868
5. Facilities provided	* Teaching methods	0.925
	* Learning process	0.810
	* Sectional Head	0.802
	* Assessment procedure	0.802
	* Monitoring & supervision	0.724
	* Teacher's background	0.591
6. Learning process	* Class teacher's interactions	0.996
	* Assessment procedure	0.995
	* Sectional Head	0.995
	* Teaching methods	0.969
	* Monitoring & supervision	0.891
	* Facilities provided	0.810
7. Class teacher's interactions	* Assessment procedure	0.998
	* Learning process	0.996
	* Sectional Head	0.996
	* Teaching methods	0.968
	* Monitoring & supervision	0.893
	* Facilities provided	0.803
8. Monitoring & supervision	* Class teacher's interactions	0.893
	* Assessment procedure	0.892
	* Sectional Head	0.892
	* Teaching methods	0.868
	* Facilities provided	0.724

The correlation values in Table 5.2 indicate the strength of variables that inter-relate with each primary school background variable. If the sectional head's performance is exemplary, the probability is that learning processes in the classrooms, in turn will be effective. If teachers use a variety of methods in teaching that suit the students, if teachers' interactions with students are development-oriented, if learning assessments are diagnostic and result in remedial teaching that facilitate students reach mastery, then learning in classrooms will be outcomes oriented.

If the teacher's professional background and experience are of a high level, the probability that he will use better teaching methods is higher. Variety in teaching methods will facilitate better learning processes. If facilities such as desks, chairs, books etc. are provided, the teacher is able to teach better. He will make use of the assessment techniques in the learning-teaching process as appropriate. All these factors are related to the monitoring and supervision programme of the Sectional Head. It is also evident that the Sectional Head's role is more important than that of the principal in respect of teaching-learning and monitoring processes in place, in the primary classroom.

All these major variables and other inter-related variables have to be considered in totality and treated as a composite process of quality improvement at classroom level in creating a favourable learning environment in the school.

Table 5.3 gives information regarding the nature of the other variables inter-related with the main variables influencing the student background.

Table 5.3 Some of the Variables that inter-relate with Student Background

Primary Variable	Inter-related Variables	Correlation
1. Pre- School Education	* Facilities at home	0.18
2. Additional support	* Facilities at home	0.260
3. Environment (Physical and Psychological needs at Home)	* Facilities at home	0.241
	* T.V and Radio	0.106
4. Facilities at school	* Learning process	0.810
	* Class teacher's interactions	0.803
	* Assessment procedures	0.802

From the Table it appears that facilities provided at home are most important. The essential requirements such as availability of water, a table and a chair, a radio, a television, a book shelf, additional reading materials, daily or weekly news papers etc. are the items included in this category.

5.4 How the Three Background Factors Have Influenced Learning Achievement

The influence of the main background factors on the learning achievement of the Grade 04 pupils was assessed using regression analysis. In this study the criterion is the learning achievement of Grade 04 pupils. In data analysis, total marks scored by pupils for the three subjects, First Language, Mathematics and English Language were taken as the dependent variable.

Regression Analysis-
..... is the analysis of the relationships between dependent (criterion) and independent (predictor) variables

- V. Chinapah-

Home background, School background and Student background were taken as the three predictor variables or the independent variables. Results of the regression analysis are given in the Table 5.4

Table 5.4: Coefficient Values of Regression Analysis

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	54.993	.183		301.215	.000
School background	3.278	1.292	.185	2.538	.011
Home background	1.248	.761	.121	1.639	.101
Student background	3.936	.313	.157	12.571	.000

★ Dependant Variable: Learning Achievement

The standardized coefficient values reveal that the most influential factor is the school background. Student background comes second. Third in order is the home background. Though these factors are weighted on the basis of standardized coefficients, it should be noted that these factors themselves, interact. On one hand, availability of a suitable place for living, living with the parents, having sufficient food, availability of water, providing at least a desk and a chair for studies, having reading material such as books and newspapers etc, a radio, a television, ability of the parents to spend some money to fulfill the child's minimum needs in schooling, making time available for his learning activities after school hours and ensuring that the child does not refrain from attending school due to various reasons at home are some of the important factors that add up to a rich home environment for the child. Better home environment leads to higher Learning Achievement.

Poor home environment leads to poor learning achievement. On the other hand interactive procedures taking place within the school contribute very much to the learning achievement of pupils. The school is involved in a process which includes learning- teaching- assessment and management. Successful management techniques adopted by the principal and the sectional head leads to efficient classroom practices. In this process, providing necessary facilities such as text books, a desk, a chair for the student gain priority. Improving the professional background of the teachers leads to better teaching. A good teacher uses embedded assessment practices. Better teaching leads to better learning. Qualitative improvements in all these factors leads to higher learning achievement of pupils. In addition, for the child to be engaged confidently in his studies, he should have a favourable home background. A pre-school education, additional support of the elders in his learning activities, fulfilling his basic physical needs such as food and clothing, looking in to psychological needs such as love and care, spending some money to cater to the learning needs of the child, class teacher's interaction with students and parents are some of the factors related to student background. Better student background leads to better learning achievement.

The Path diagram in Figure 5.7 shows how the variables relate directly to learning achievement of the pupils. The way these variables can be categorized and how they interact with each of the other factors is also indicated in the path diagram.

The standardized coefficient values (Beta Values) given in the diagram show that the school background variable has the highest value as a predictor variable. Therefore the school authorities have to focus considerable attention on what is happening in the classroom. The second most important variable is the student background, which is a combination of home related and school related factors, but largely influenced by home related factors. Third comes the home background factors. Therefore, it can be concluded that not only the school related factors but also the home related factors influence considerably the academic success of children at primary level. Providing basic education is the responsibility of both parties, home and school. The formal school is the institution to which this task is entrusted and personnel in the system are accountable to the general public, for effective provision of basic education.

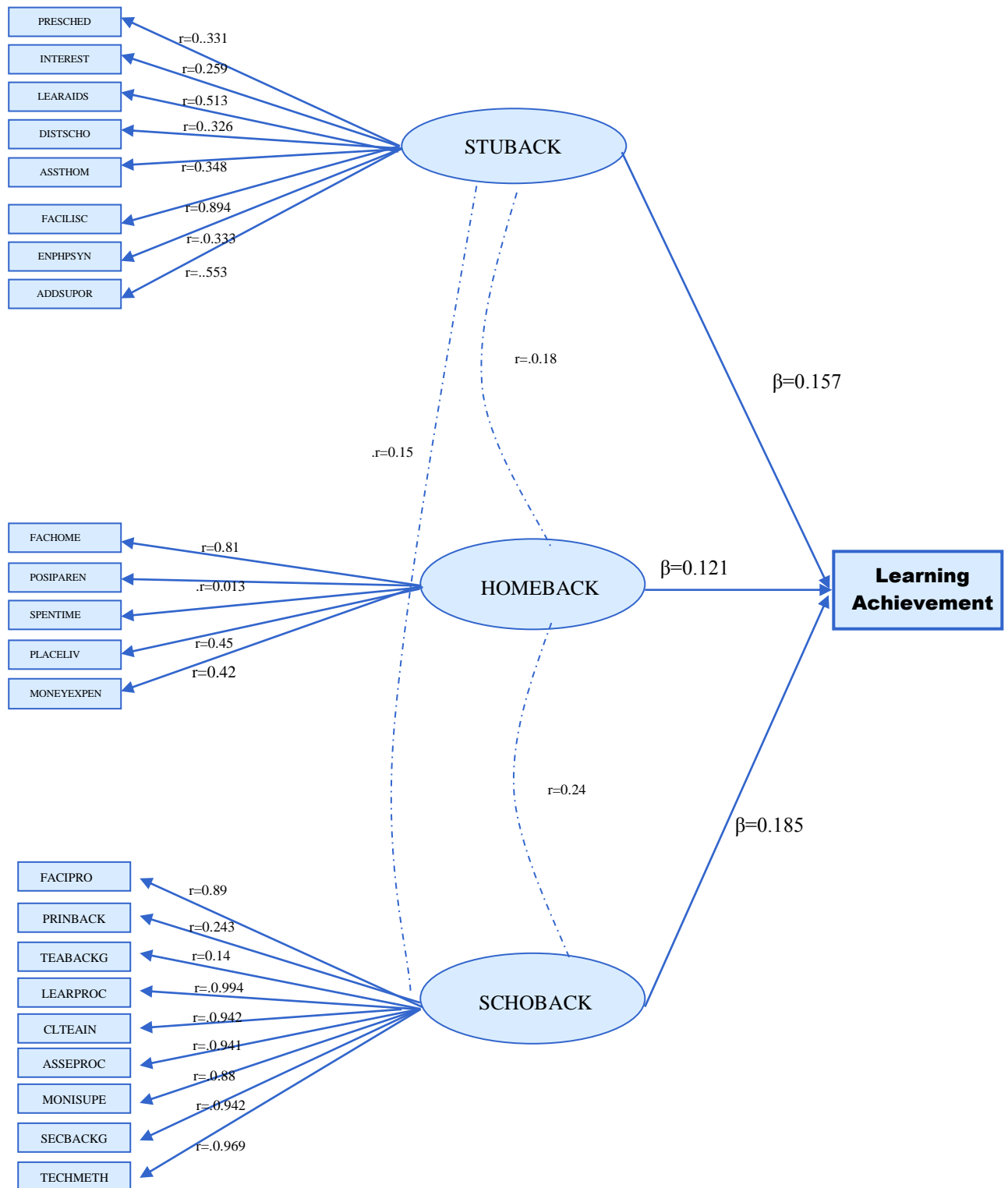


Figure 5.7: Path Diagram on Factors Influencing Learning Achievement

Abbreviations used in the path diagram

<u>Label</u>	<u>Variable Name</u>
➤ SCHOBACK	School background
➤ FACIPRO	Facilities Provided
➤ PRINBACK	Principal's background
➤ TEABACKG	Teacher's background
➤ LEARPROC	Learning Process
➤ CLTEAIN	Class Teacher's Interaction
➤ ASSEPROC	Assessment Procedure
➤ MONISUPE	Monitoring and Supervision
➤ SECBACKG	Sectional Head's background
➤ TECHMETH	Teaching Methods
➤ HOMEBACK	Home background
➤ FACHOME	Facilities at Home
➤ POSIPAREU	Position of Parents
➤ SPENTIME	How time is spent after school hours
➤ PLACELIV	Place of living
➤ MONEYEXPEN	Expenditure
➤ STUBACK	Student background
➤ PRESCHED	Pre School Education
➤ INTEREST	Interest inr Education
➤ LEARAIDS	Learning Aids
➤ DISTCHO	Distance from School
➤ ASSTHOM	Assisting Home needs
➤ FACILISC	Facilities at Schools
➤ ENPHPSYN	Environment Physical and Psychological needs at home
➤ ADDSUPOR	Additional Support

5.5 Summary

Three factors were identified as background factors that influence learning achievement of children in primary schools in Sri Lanka. School background is the most influential factor that predicts learning achievement. Student background comes second. The third is the home background. Student background factors have features in common with school and home backgrounds. Learning achievement is, therefore, a product of the interaction of these three background factors.

5.6 References

Bryman A. and Cramer D. (1999) *Quantitative Data Analysis*. Routledge. London.

Chinapah V. (1997) *Hand book on Monitoring Learning Achievement*. UNESCO. Paris.