

# **EFFECT OF PERSONAL CHARACTERISTICS OF STUDENTS AND THEIR HOME ENVIRONMENT ON ACADEMIC ACHIEVEMENT AT BASIC EDUCATION HIGH SCHOOLS IN MYANMAR**

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## **Abstract**

The present study provided an examination of the effect of personal characteristics of students (Academic Self-efficacy, Academic Motivation) and their home environment (Parental Involvement, Socio-Economic Status) on academic achievement of students at Basic Education High Schools in Myanmar. A total of 1309 Grade-11 students from 15 government schools and 3 private schools in 6 Regions and States. Academic self-efficacy scale and academic motivation scale which had Cronbach's alpha of 0.929 and 0.839 were used to assess student personal factors and parental involvement questionnaire which had Cronbach's alpha of 0.889 and socio-economic questionnaire were used to assess home environment. Before executing discriminant analysis, data were firstly screened for outliers and then, assumptions for discriminant analysis were checked. Group statistics showed that there were mean differences among all the student and parent factors under the categories of high, average, and low achieving groups. ANOVA table revealed all the student and parent factors were reliable discriminators of the high, average, and low achieving groups. The conducted discriminant analysis was a three-group analysis, and therefore, two discriminant functions were obtained. Discriminant function 1 was statistically significant with Wilks' Lambda = .42, chi-square = 398.86 at  $p < .001$  while Function 2 was statistically significant with Wilks' Lambda = .91, chi-square = 13.64 at  $p < .001$ . Standardized canonical discriminant function coefficients and structure matrix revealed that students' academic achievement was mainly determined by socio-economic status and parental involvement and contributed 39.69 %. Academic self-efficacy and academic motivation contributed additional 8.41% to students' academic achievement. The discriminant model classified correctly 77.3 % of students as high achievers, 10.8% of students as average achievers, and 74.7% of students as low achievers respectively. A total of 60.9 % of teachers were correctly classified into three groups with 60.2% of cross-validated grouped cases were correctly classified.

**Keywords:** Academic Achievement, Parental Involvement, Academic Motivation, Academic Self-Efficacy

## **Introduction**

### **Importance of the Study**

Education is an important human virtue, necessity of society, bases of excellent life and sign of freedom. Education plays an impressive role in the enhancement of individual and society. The improvement of any nation is hinged on solid educational settlement for its citizenry. Education allows a person to develop physically, mentally, socially, emotionally and intellectually. Education is crucial to creating a society, that is dynamic and productive, providing opportunity and fairness to all. Therefore, it is very axiomatic that efforts need to be geared in the direction of maintaining high standards in schools and institutions. The standards will be reflected in students' academic achievement (Adeyemi, A. M., & Adeyemi, S. B., 2014).

The advancement of the education sector is a high priority for Myanmar and the government was dedicated to effective implementation of practical education reform. In accordance with the statistics from Myanmar Board of Examination (2017), average pass rate amongst rural Basic Education High Schools is below the national with many achieving zero

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percent pass rate. It, consequently, becomes very critical for educators to uncover the likely grounds of low academic achievement.

Crosnoe, Johnson and Elder (2004) stated that higher scholastic achievement is a top priority for educators and various researchers have sought to identify its determinants. It is supposed for making a difference locally, regionally, nationally and globally. Educators, trainers, and researchers have long been interested in investigating the variables contributing effectively for quality of performance of students. The ultimate aspect for the educators is to capitalized their students' education effectively so that they may be able to display quality performance in their academics. To achieve this objective, this study tries to account various surrounding variables to concurrently examine the influencing factors upon Myanmar matriculation examination pass rate. By providing the information that can contribute higher academic achievement, this can enlighten educators and responsible authorities to create the better learning environment that enhance quality education in the Myanmar community.

### **Purpose of the Study**

The primary purpose of the study is to investigate the impact of students' personal characteristics such as academic self-efficacy and academic motivation and their home environment such as parental involvement and socio-economic status on the academic achievement of Grade-11 students.

### **Definitions of Key Terms**

**Academic Achievement** refers to the level of schooling in which students have successfully completed and their ability to attain success in their studies (Larocque et al., 2011). In this study, it will be taken as the outcome of matriculation examination.

**Parental Involvement** may be defined as parental participation in the educational processes and experiences of their children (Jeynes & William, 2007). It typically concerns the amount of effort put into child-oriented education as well as other activities (Nyarko, 2011).

**Academic Motivation** is defined as a mental, emotional and behavioral determinants of student investment in education and commitment (Tucker et al., 2002). It is the starting point for learning a lesson, mobilizes the student and contributes to the student to perform what he or she should do during the school years (Peklaj and Levpušček, 2006).

**Academic Self-Efficacy** refers to student's beliefs in their ability to master new skills and tasks, often in a specific academic domain (Pajares and Miller, 1994).

### **Review of Related Literature**

Academic achievement is assumed an outcome of education and is defined as a student's success in reaching educational goals (Shakir, 2014). It is considered to be the heart which the whole education system pivots on. In the words of Kpolvie, Joe and Okoto (2014), secondary education plays a crucial role in laying the foundation for the further education of students. If a sound foundation is laid at the secondary school level, students can better deal with the challenges of life and profession with great ease. However, different people have explained various factors responsible for the scholastic achievement of students.

**Achievement Motivation Theory:** McClelland's theory postulated that people are motivated in varying degrees by their need for achievement, need for power, and need for affiliation and that these needs are acquired, or transformed, during an individual's lifetime (Daft, 2008; Lussier & Achua, 2007). Another theory of Achievement Motivation was proposed by Atkinson and Feather (1966) as cited in Zenzen (2002). They asserted that an individual's achievement-oriented behavior is on the basic of three parts: the first part being the individual's predisposition

to success, the second part being the probability of success, and third, a person's beliefs about the value or cost of the task. This theory can be aligned to the study as has been held by others (Nyoni & Garikai, 2017) and is very relevant to the current study.

**Walberg's Theory of Educational Productivity:** According to Farooq, Chaudhary, Shafiq & Berhanu (2011), Theory of Educational Productivity by Walberg (1981) determined three groups of nine factors based on affective, cognitive and behavioral skills for optimization of learning that affect the quality of academic performance: Aptitude (student ability, development level and motivation); instruction (amount and quality); environment (home, classroom, peers and exposure to mass media outside of school).

**Self-Determination Theory:** In the words of Hardre, Chen, Huang, Chiang, Jen & Warden (2006), according to self-determination theory, students' motivation for academic engagement varies in both strength (amount) and quality (nature), and both variations determine learning, achievement, and continuation to further education. Self-determined, intrinsic motivation emerges from the learner's own needs and desires rather than from outside pressures (Deci & Ryan, 1987). Although it is this high-quality, self-determined, intrinsic motivation that most dominantly predicts positive school-related engagement and success, all students are not all intrinsically motivated for every task or subject. Students can promote their motivation towards learning of tasks and content through internalization, the process of a student adopting increasing choice and value for learning, and ownership of the learning process (Reeve, Deci, & Ryan, 2004; Ryan & Connell, 1989). Internalization is promoted through the support of three important student characteristics: autonomy, competence, and relatedness (Black & Deci, 2000; Ryan & Deci, 2000). Through internalization, a student becomes increasingly self-determined (versus other-determined or extrinsically pressured) (Deci, 1995; Reeve et al., 2004).

### **Student Factors that Affect Students' Academic Achievement**

**Academic Self-Efficacy:** Self-efficacy refers to student's perceptions in their ability to master new abilities and tasks, often in a particular educational domain (Pajares and Miller, 1994). Learners achieve information to appraise their self-efficacy from their performances, their vicarious experiences, the persuasions they receive from others, and their physiological reactions. Self-efficacy beliefs have an impact on task choice, effort, persistence, resilience, and achievement outcomes (Bandura, 1997; Schunk, 1995). Therefore, it is not surprising that many researches revealed that self-efficacy affects academic achievement motivation, learning and educational success (Pajares, 1996; Schunk, 1995). In line with these findings, Schunk and Zimmerman (1994) reported that there was a positive direction between self-efficacy and academic achievement and that if students are trained to have higher self-efficacy beliefs their overall academic performance additionally improves. Students with strong senses of self-efficacy tendency engage in challenging activities, invest more effort and time, persistence, and show excellent academic performance in comparison with students who do not own such confidence (Bong, 2001).

**Motivation for Learning:** Singh (2011) opined that one of the most essential factors that lead one to their goals is the drive. This drive is known as motivation. The drive may derive from an internal or external source. According to need theory, which is also known as the content theory of motivation mainly focuses on the internal drives that energize and direct human behavior. Motivation for learning is defined as students' tendency for making efforts with the aim of achieving academic success (Ryan & Deci, 2000). According to the theoretical background, the self-determination theory (Ryan & Deci, 2000) as cited in (Maric, 2014), the individual factors and intrinsic motivation have greater impact on motivation for learning and academic engagement than social, environmental factors and extrinsic motivation. Recent researchers

showed the significance of individual motivational factors and intrinsic motivation for learning and achieving higher academic success (Castiglia, 2010; Nedeljković, 2012; Parr, 2011; Velki, 2011, as cited in Maric, 2014).

### Parent Factors that Affect Students' Academic Achievement

**Home Environment and Parental Involvement:** The family is a social unit in any society and it is the main source of early stimulation and experience in influence of home environment on academic performance of high school students. Home environment and early experiences help to develop curiosity, help build self-efficacy beliefs and shape the individual's behavior (Nordin et al., 2012). The home has a tremendous influence on students' physical, psychological, emotional, social and economic state. In continuation, learner's home environment factors that influences their academic performances may be considered in terms of parental participation and support in students' learning and socio-economic status of the family.

The scholastic achievement of students heavily depends upon the parental involvement in their academic activities to gain the higher level of quality in academic success (Barnard, 2004; Henderson, 1988; Shumox & Lomax, 2001, as cited in Nordin et al., 2012). And, parental involvement may be varied from culture to culture and society to society. In the words of Epstein (1995), the supportive learning activities in the home that reinforce school curricula might decorate the educational accomplishment of students.

**Socio-Economic Status:** The family's socio-economic factor has an impact on the student's aspiration, motivation, self-efficacy and involvement in co-curriculum activities. As reported in Dukmok & Ishtaiwa (2015), students' academic achievement may be affected by the socio-demographic foundation of their guardians such as the education level, family size and family income (Juma, Simatwa, & Ayodo, 2012; Udida et al., 2012). In studies conducted by Udida et al. (2012) and Selvam (2013), students' learning was positively impacted by their parents' level of education. Krashen (2005) as cited in Farooq et al., (2011) concluded that students whose parents are educated can better assist their children in their work and participate at school. Educated parents can offer such a surrounding that suits best for educational success of their children. The school educators can provide guidance and counseling to parents for nurturing positive home environment for enhancement in students' quality of academic work (Marzano, 2003).

## Method

### Participants of the Study

According to a release from the Myanmar Board of Examination for 2018-2019 Academic Year, the researcher divided Regions and States into three groups such as high, average, and low achieving groups. These groups were presented in the Table 1.

**Table 1** Regions and States Representing High, Average and Low Achieving Group

High Achieving Group	Average Achieving Group	Low Achieving Group
<ul style="list-style-type: none"> <li>• Mon</li> <li>• Mandalay</li> <li>• Sagaing</li> </ul>	<ul style="list-style-type: none"> <li>• Tanintharyi</li> <li>• Yangon</li> <li>• Magway</li> <li>• Shan (North)</li> <li>• Nay Pyi Taw</li> <li>• Kachin</li> <li>• Bago (West)</li> <li>• Ayeyarwady</li> </ul>	<ul style="list-style-type: none"> <li>• Bago (East)</li> <li>• Rakhine</li> <li>• Shan (East)</li> <li>• Chin</li> </ul>

High Achieving Group	Average Achieving Group	Low Achieving Group
	<ul style="list-style-type: none"> <li>• Kayar</li> <li>• Shan (South)</li> <li>• Kayin</li> </ul>	

In line with the purpose of exploring the factors affecting the academic achievement of students, the researcher decided to study all these three groups. The participants of the study were obtained by selecting two Regions and States from each of the high, average and low achieving groups with the simple random sampling technique. Mon State and Mandalay Region were selected as high achieving group, Yangon Region and Bago (West) Region were chosen as average achieving group as well as Bago Region (East) and Rakhine State were chosen as low achieving group. From each of the selected Regions and States, three basic education high schools from different townships including basic education high (branch) schools and private schools were randomly selected by the researcher. Finally, a total of 1309 students from the selected 18 schools involved in the study.

### Instrumentation

Academic Motivation Scale developed by Vallerand et al. (1992, 1993) which is a 27-item Likert type instrument and Academic Self-Efficacy Scale prepared by Gafoor & Ashraf (2006) which is a 40-item Likert type instrument was adapted and applied to assess the personal characteristics of students. Parental Involvement Questionnaire developed by Naseema and Gofoor (2001) which was a 62-item Likert type instrument and Socio-Economic Status Questionnaire were applied to examine the home environment of students. Pilot testing was conducted with 85 high school students and the results revealed that all the selected instruments were reliable and acceptable for Myanmar students in accordance with their Cronbach's alpha values (Academic Self-Efficacy Scale;  $\alpha = 0.929$ , Academic Motivation Scale;  $\alpha = 0.839$ , Parental Involvement Questionnaire;  $\alpha = 0.889$ ).

### Data Analysis and Findings

Discriminant Analysis was conducted to examine whether the four variables, parental involvement, socio-economic status, academic self-efficacy and academic motivation, could distinguish students' academic achievement as high, average and low achieving groups. Preliminary Statistics were conducted to check the assumption of discriminant analysis. Since discriminant analysis was highly sensitive to outliers, data for the study was firstly screened for outliers. Firstly, several outliers were removed by using Mahalanobis distance.

Assumption of normality and linearity was checked by evaluating bivariate scatterplots of the independent variables such as parental involvement, socio-economic status, academic self-efficacy, and academic motivation. The result revealed that this assumption was satisfied since the shape of the scatterplots showed elliptical.

**Table 2** Pooled Within-Groups Matrices

Variable	1	2	3	4
1. Parental Involvement	1.00	.15	.52	.26
2. Socio-Economic Status		1.00	.17	.09
3. Academic Self-Efficacy			1.00	.49
4. Academic Motivation				1.00

Table 2 did not indicate the existence of multicollinearity among all the independent variables, i.e., all the correlation coefficients were less than .60 and accordingly supporting one of the assumptions of discriminant analysis.

The basic assumption in discriminant analysis is that variance-co-variance matrices are equivalent. According to Table 3, Box's M test was 131.73 with  $F = 5.87$  which was significant at  $p < .001$ . So, it could be concluded that the three groups do differ in their covariance matrices, violating the assumption.

**Table 3** Box's M Test of Equality of Covariance Matrices

<b>Box's M</b>	131.73
<i>F</i>	5.87***
<i>p</i>	.000

\*\*\*  $p < 0.001$

However, one should keep in mind that Box's M is highly sensitive to non-normal distributions (Mertler & Vannatta, 2002). When with large samples, a significant result is acceptable and Box's M should be interpreted in conjunction with inspection of the log determinants.

**Table 4** Log Determinants Table

<b>Achievement Group</b>	<b>Rank</b>	<b>Log Determinant</b>
low	4	-5.49
average	4	-4.53
High	4	-4.11
Pooled within-groups	4	-4.81

In Table 4, the values of log determinants were quite similar. On the other hand, with large sample, a significant Box's M was acceptable.

Consequently, as all the assumptions were checked, discriminant analysis was conducted by applying enter method.

**Table 5** Group Statistics Table

<b>Achievement Group</b>	<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>
Low	Parental Involvement	459	3.00	.28
	Academic Self-Efficacy	459	2.65	.27
	Academic Motivation	459	3.15	.32
	Socio-Economic Status	459	2.01	.76
Average	Parental Involvement	316	3.13	.27
	Academic Self-Efficacy	316	2.79	.29
	Academic Motivation	316	3.26	.37
	Socio-Economic Status	316	2.56	.35

Achievement Group	Variable	N	Mean	SD
High	Parental Involvement	534	3.17	.28
	Academic Self-Efficacy	534	2.79	.31
	Academic Motivation	534	3.21	.37
	Socio-Economic Status	534	2.89	.66

The group statistics table provided basic descriptive statistics for each of the independent variables for each of three achieving groups (see Table 5). The table showed that among the four variables, differences between mean scores of all variables were slightly different except socio-economic status variable which showed the sound mean scores difference.

**Table 6** ANOVA Table for Tests of Equality of Group Means

Variable	Wilks' Lambda	F	df1	df2	p
Parental Involvement	.93	42.85***	2	1306	.000
Socio-Economic Status	.75	203.96***	2	1306	.000
Academic Self-Efficacy	.92	35.05***	2	1306	.000
Academic Motivation	.98	8.07***	2	1306	.000

\*\*\*  $p < 0.001$

Table 6 provided strong statistical evidence of significant differences between mean scores of high, average, and low achieving groups for all predictor variables with socio-economic status, parental involvement and academic self-efficacy producing very high value  $F$ 's in line with the values of Wilks' Lambda.

### Significant Tests and Strength of Relationship for Each Function

The conducted discriminant analysis was a three-group analysis, and so two discriminant functions were obtained as described in Table 6.

**Table 7** Eigenvalue and Wilks' Lambda Table

Test of Function	Eigen value	Canonical Correlation	% of Variance	Wilks' Lambda	Chi-square	df	p
1	.68	.63	96.5	.42	398.86***	8	.000
2	.11	.29	3.5	.91	13.64***	3	.000

\*\*\*  $p < 0.001$

In Function 1, a canonical correlation of .63 represented that the correlation between the discriminant function and the levels of dependence variables. Squaring this value produced the effective size, which revealed that the model explained 39.69 % of the variation in the grouping variable, academic achievement. In function 2, additional 8.41 % of variation was explained by the model with a canonical correlation of .29. Since the effective size of the function 2 was low, it can be concluded that there might other unassessed factors for a more complete picture affecting matriculation examination pass rate that need to be explored.

According to Table 7, both discriminant functions were significant at  $p < .001$ . By inspecting the two functions, function1 was significant, Wilks' Lambda = .42, chi-square= 398.86,  $p < 0.001$  as well as function 2 was significant, Wilks' Lambda = .91, chi-square= 13.64,  $p < 0.001$ . Comparing these two functions, function 1 had greater discriminating ability between three achievement groups as its smaller Wilks' Lambda.

### Discriminant Function Coefficients

**Table 8** Standardized Canonical Discriminant Function Coefficients

Variable	Standardized Function Coefficients	
	Function 1	Function 2
Socio-Economic Status	.89	-.36
Parental Involvement	.49	.43
Academic Self-Efficacy	.22	.59
Academic Motivation	-.16	.42

Standardized canonical discriminant function coefficients for Function 1 and Function 2 in Table 8 indicated the relative importance of independence variables in predicting the dependence variable, students' academic achievement. Socio-economic status was the strongest predictor while parental involvement was next important variable in Function 1. These two variables with large coefficients stand out as those that strongly predicted allocation to high, average and low achieving groups. On the other hand, academic self-efficacy was strongest variable in discriminant function 2 and gained additional explanation of the model.

**Table 9.** Structure Matrix Table

Variable	Correlation Coefficients with Discriminant Functions	
	Function 1	Function 2
Socio-Economic Status	.90*	-.18
Parental Involvement	.42*	.27
Academic Self-Efficacy	.29	.78*
Academic Motivation	.16	.82*

The interpretation of structure matrix table (Table 9) provided another way of indicating the relative importance of predictors. Based on the structure coefficient value, it could be concluded that students' academic achievement was mainly determined by socio-economic status and parental involvement. Academic self-efficacy and academic motivation were not clearly loaded on discriminant function 1. Accordingly, the first function seemed to reflect socio-economic status and parental involvement but not the other values. One reasonable interpretation would be that seems to reflect parent factors. Hence, Function 1 was so named as parent factors. Given that Function 1 achieved significance, it can thus conclude the extent to which parent factors vary across the three achievement groups; high, average, and low. On the other hand, the second function seemed to reflect academic self-efficacy, and academic motivation but not socio-economic status and parental involvement. One reasonable interpretation would be that academic self-efficacy and academic motivation seems to reflect student factors. So, function 2 accounted for variation of student factors among high, average and low achieving groups.



**Table 10.** Canonical Discriminant Function Coefficients (Unstandardized coefficients)

Variable	Function	
	1	2
Parental Involvement	.58	2.31
Socio-Economic Status	.31	-.09
Academic Self-Efficacy	.28	.98
Academic Motivation	-.11	1.02
(Constant)	-3.21	-7.58

According to Table 10, two discriminant function equations were as follows.

Parent Factor =  $-3.21 + (.58 \times \text{Parental Involvement}) + (.31 \times \text{Socio-Economic Status}) + (.28 \times \text{Academic Self- efficacy}) - (.11 \times \text{Academic Motivation})$

Student Factor =  $-7.58 + (2.31 \times \text{Parental Involvement}) - (.09 \times \text{Socio-Economic Status}) + (.98 \times \text{Academic Self-efficacy}) + (1.02 \times \text{Academic Motivation})$

### Classification Statistics

The classification matrix was shown in Table 11. It clearly showed how students constituting the sample are distributed across groups. Original classification results revealed that 77.3 % of students as the low achieving group were correctly classified, 10.8% as average achieving group where as 74.7 % of those as high achieving group were correctly classified. It was found that the conducted discriminant analysis was weak in explaining the average achievement group when compared to high and low achievement groups. For the overall sample, 60.9 % of students were correctly classified into high, average, and low achieving groups while 60.2 % of cross-validated grouped cases were correctly classified.

**Table 11.** Classification Results for High, Average, and Low Achievement Groups

Academic Achievement Group			Predicted Group Membership			Total
			low	average	high	
Original	Count	low	355	29	75	459
		average	171	34	111	316
		high	102	33	399	534
	%	low	77.3	6.3	16.3	100
		average	54.1	10.8	35.1	100
		high	19.1	6.2	74.7	100
Cross-validated	Count	low	356	25	78	459
		average	170	34	112	316
		high	104	30	400	534
	%	low	77.6	5.4	17.0	100
		average	53.8	10.8	35.4	100
		high	19.5	5.6	75.0	100

Note. 60.9 % of original grouped cases correctly classified.

Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

60.2 % of cross-validated grouped cases correctly classified.

## **Conclusion**

The results of discriminant analysis highlighted that both parent factors (parental involvement and socio-economic status) and student factors (academic self-efficacy and academic motivation) were significant predictors of students' academic achievement, especially the family environment had tremendous effect with its stronger contribution on the discriminant function. The findings gave prominence to the fact that although both student factors were positively correlated with academic pass rate, there might exist unexplored students' personal characteristics influencing upon it that needs to be explored.

## **Suggestions**

The findings of the current study give prominence to the view that parental involvement in a child's education along with social, environmental and economic factors may impact students' development in the areas such as cognition, and intellectual development. It is recommended that schools should capitalize upon what parents are already doing by helping them to support and interact with their children at home learning activities that reinforce what is being taught in school. The results of this study pointed out the strong positive bond between homes and schools in the development and education of children which confirmed Hoover-Dempsey and Sandler (1997) argued that parental involvement enhances academic self-efficacy, intrinsic motivation for learning as well as self-regulation which in turn operates to enhance educational attainment of students.

Epstein (1995) stated that parents, school, and community are important spheres of influence on students' development and that educational accomplishment is enhanced when these three environments operate collaboratively toward the shared goals. This study recommends that schools must help families create family environments that nurture students' learning by providing them with information in the areas such as children's health and nutrition, discipline, adolescents' needs, parenting approaches. At the same time, schools must seek to comprehend and incorporate aspects of their students' family life into what is taught in the schools.

## **Limitations of the Study**

Despite the contribution of this study, there are some limitations that need further examination and investigation. The selected independent variables from each of the factors were elicited by the researcher on the basis of the review of the related literature and the previous researches on the underlying area. A more complete picture of explanation should be conducted through the meta-analysis. Secondly, since the study was conducted the survey during the middle of academic year, there might students drop out problems and teachers who might transfer or promote to another schools. Thirdly, the term academic achievement in the study referred to the achievement of the combination of six subjects and it could not specify the exact academic subject matter.

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