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Demography Factors and Students' Academic Performance in Secondary Schools

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ABSTRACT

Many researchers believe that academic performance is one of the important predictors of success of an educational system. Students' academic performance can also be considered as a point of comparison among educational institutions with the focus of success at both national and global level. The aim of this study was to investigate the relationship between demographic factors and academic performance in the secondary schools in Maldives. Findings of this study indicated that there was a significant association between age and academic performance. At the same time, it reported a significant association between socioeconomic status and academic performance. However, the researcher found no evidence to support the existing a significant association between gender and academic performance. These results support previous research and possible directions for public policy are given.

Keywords: **Demography Factors, Students' Academic Performance, Secondary Schools.**

INTRODUCTION

Education is seen as an emerging industry with a prime focus on academic performance by delivering potential education that produces well-educated, skilled, mannered students catering the needs and requirements of the dynamically growing markets (Hijazi & Naqvi, 2006). Many researchers believe that academic performance is one of the important predictors of success of an educational system. The current educational system bases its success on students' academic performance. Evidence indicates that "schools can only be successful if their students are progressing (Brisk and Center, 2000, p. 7). In other word, the success of schooling or the educational process is measured by students' academic performance at schools. Students' academic performance can also be considered as a point of comparison among educational institutions with the focus of success at both national and global level.

"Academic performance serves as the fundamental criterion for passing from one academic level to another or from a lower level to a higher level" (Al-Rofo, 2010, p.53). In this respect, an academic report may communicate the level of academic performance that a student has achieved over a course of study. The "sole purpose of a grade on an academic report, if it is to be valid source of information, is to communicate the academic achievement of the student" (Allen, 2005, p. 220). Moreover, academic performance determines the extent to which the teachers and school leaders are successful in terms of pedagogical and management practices.

However, there is no study investigating the factors affecting students' academic performance in the context of Maldives. Therefore, the present study attempts to fill the gap in the literature by investigating the relationship between demographic factors (age, gender, and socioeconomic status) and students' academic performance in the secondary school in Maldives. The present study is the first study of its type for Maldivian secondary school students. This study is remarkably connected to one of the major educational problems faced by the country. That is the current rate school failures due to the low academic performance. The problem of low accumulative averages in secondary examinations has been considered as one of the major academic problems in Maldives which encounter students and cause bad effects on students, teachers, parents and the nation as a whole.

Moreover, this study is significant for educational stakeholders especially for policy makers, school administrators and teachers. Findings of the study will provide empirical knowledge for shaping educational policies to solve current problems. Meanwhile, this study is beneficial to the parents, who can shape their behaviors as well as family relationship with children and enhance the students' capability to undertake higher secondary and tertiary education respectively. Finally, the country may find some form of solution for the potential loss of human capital caused by the drop-outs.

LITERATURE REVIEW

Students' academic performance is a common measure used by most educational institutions and is a crucial factor in admission to postgraduate programs, access to job markets, recruitment in universities, financial aid and other recognitions. Several studies concerned with the academic performance have resulted in a number of competing definitions. Even though they appear in different themes, it grants a similar course and they emphasized equivalent dimensions of determinants.

Pinilla and Munoz (2005) qualified academic performance of a student by taking into account three separate variables: (a) grades, (b) time and (c) annual approbation rate. They measured grades by using the sample grade point average while time is defined as the number of years a student has been at the institution. Annual approbation rate consists of the number of approved courses per year. Similarly, Allen (2005) associated final class grades as summaries of students' academic achievement of content knowledge of a subject as academic performance. Likewise, Kooi and Ping (2006) conducted a study on factors influencing students' performance in university and stated that the Grade Point Average (GPA) can be considered as the basis of students' academic performance.

Many studies have examined the factors that influence academic performance in primary and secondary education as well as at university level, with the purpose of enhancing learning at these stages and reducing drop-out rates (Guardia et al., 2006). Moreover, Cheesman, Simpson and Wint (2006) conducted a study on determinants of students' academic performance at university level and found that individual and household characteristics such as student ability, motivation, the quality of secondary education obtained as well as gender influences students' academic performance.

According to Kooi and Ping (2006), age can be a significant predictor of students' academic performance. On the one hand, a number of studies found that an inverse relationship between age and students' academic performance (Cheesman et al., 2006). According to Dayio lu and Turut-A ik (2007), gender of the student may be a factor in determining student performance. Hannover and Kessels (2011) reported that boys are less likely to enter higher educational tracks because they achieve worse grades than girls (controlling for competence).

Meanwhile, Ahmad, Jelas and Ali (2010) investigated students achievement based on gender and type of schools. Findings of this study indicated that there were differences in the cognitive-motivational functioning of boys and girls in the academic environment, with the girls having a more adaptive approach to learning tasks. Moreover, Chambers and Schreiber (2004) found that girls have higher academic achievement than boys. Similarly, Ceballo, McLoyd and Toyokawa (2004) reported that girls exert more effort at school, leading to better school performance.

According to Jeyes (2002), the socio-economic status (SES) of a child is identified by combining parents' educational level, income level and occupational status. A great number of empirical studies have been conducted in varying contexts at different occasions investigating the effects of socio-economic status (SES) on students' academic performance. For example, Eamon (2005) found that students who have a low social-economic status earn lower test scores and are more likely to drop out of school. It would seem that low SES negatively affects academic achievement because low SES prevents access to vital resources and creates additional stress at home (Eamon 2005). Moreover, many researchers believe that SES shows the quality of home life for children. According to Majoribanks (1996), children from single-parent households do not perform as well in school as children from two-parent households. This is due to the fact that single-parents are less involved with their children and give less guidance and encouragement and have lower expectations of their children than two-parent households (Majoribanks, 1996).

Maternal characteristics are significant factors that affect students' academic performance (Eamon 2005). Mothers and fathers who are more educated and have higher self-esteem have children who receive higher test scores

(Eamon 2005). It is clear that such parents can provide a supportive environment at home which has a positive effect on a student's academic performance.

This study proposes a model that combines gender, age, and socio-economic status on students' academic performance. Based on reviewing literature, it is expected that younger students will have higher test scores than older students and academic performance of girl students will be better than male students. Moreover, this study predicts that as social economic status increases, students' test scores will improve as well.

METHODOLOGY

A descriptive research was conducted to collect data for this study from grade 10 students in three of the well-known secondary schools in Maldives.

A survey questionnaire was administrated to 97 participants randomly. The instrument consisted of 5 items on personal particulars; 19 items on socioeconomic status and 17 items on academic performance. The survey questionnaire applied in this study was reviewed by the experts in the field of educational technology and the educational management. Their examinations on content validity were considered to modify the elements of the survey questionnaire. Moreover, internal consistency reliability of the questionnaire was established.

The value of Cronbac's alpha coefficient for all these scales reached 0.79 which is above Cronbach Alpha value (0.60). Participants from three schools completed the survey questionnaire provided by the researcher though sending the hardcopies of questionnaires to the schools. Among the 130 questionnaires sent to the schools, 100 questionnaires were returned to the researcher. Furthermore, descriptive statistics was used for sample description and inferential statistics (Chi-Square of independent) was used to examine the association of demographic factors and academic performance.

FINDINGS AND DISCUSSION

Descriptive Summary of Independent Variables

According to Table 1, about 52.1% of the respondents were male. Approximately half of the respondents (49.9%) were less than 15 years old. Annual income of the respondents' parents was low (56.2% and 57.3% for fathers and mothers respectively). Moreover, about 59.4 % of students' fathers and 66.7% of students' mothers attended basic education classes. Besides, 74% and 58.3% of the respondents had access to computer and internet respectively.

Table 1
Descriptive Summary of Independent Variables

Variable	category	%
Gender	Male	52.1
	Female	47.9
Age	Less than 15 years	49.9
	16-17 years	43.8
	More than 17 years	7.3
Father's level of income	Low	56.2
	Moderate	33.3
	High	10.5
Mother's level of income	Low	57.3
	Moderate	35.1
	High	7.6
Father's educational level	Did not attend school	14.6
	Attend basic education classes	59.4
	Diploma/Degree/ Master/PhD	26
Mother's educational level	Did not attend school	17.7
	Attend basic education classes	66.7
	Diploma/Degree/ Master/PhD	15.5
Access to computer	Yes	74
	No	26
Access to Internet	Yes	58.3
	No	41.7

Relationship between demographic factors and Academic performance

This section addresses the association between academic performance and the main independent variables: age, gender, and socio economic status.

The association between academic performance and independent variables were explored by using chi-square test of independence. The chi-square test for independence was used to determine whether two categorical variables are related.

Table 2
Association between demographic factors and Academic Performance

Variable	Chi-Square	Sig
Age	14.91	0.000
Gender	4.30	0.105
Socio- economic status	11.24	0.000

Age and Academic Performance

The first research question was: is there an association between age and students' academic performance?

The association between age and academic performance was investigated by a chi-square test of independence. As was shown in Table 2, the relation between these variables was significant, $X2 = 14.91$, $p < .05$. this result indicates that academic performance is dependent on age. Based on Cross-tabulation, younger students performed much better than their older counterparts. As such, it was found that the score for academic performance was much higher in the age group less than 15 years and 16-17 years than in those above 17 years. The findings were consistent with a number of studies in terms of the relationship between age and academic performance. Besides, the findings of some other researcher were aligned with the findings of this study in terms of age as a predictor of academic performance (Hong, 2001; Kawaguchi, 2011; Martin & Dowson, 2009).

Gender and Academic Performance

The second research question was: Is the proportion of academic performance of males' students the same as the proportion of academic performance of females' students?

A chi-square test of independence was performed to examine the relation between gender and academic performance. The relation between these variables was not significant, $X2 = 4.30$, $p > .05$. It indicates that academic performance is independent of gender. The study result did not confirm findings of Hannover and Kessels (2011) and Ahmad et al. (2010).

Moreover, the present study found no evidence of any difference between male and female in terms of academic performance. One of the reasons for such a finding can be linked to the nature of the learning environment in the secondary school in Maldives. When these findings are reflected back to the context of Maldives, it appears that

students of both genders have been experiencing the same kind of learning environment. This findings is consistent with the findings of Mandilaras (2004) who reported that, when other variable influencing academic performance is controlled, male and female do not have significantly different probabilities of obtaining upper-second-class or first-class degrees.

Socioeconomic Status (SES) and Academic Performance

The third research question was: Is there an association between socioeconomic status (SES) and students' academic performance?

A Chi-square test of independence was performed to examine the association between socioeconomic status (SES) and students' academic performance. It was found that there was association between these two variables, $X2 = 11.24$, $p < .05$, indicating that academic performance is dependent on socioeconomic indicators such as place of residence, family size, level of education of parents, living standard at home, family income, internet access and university education in the family. This finding is in line with the report provided by Ministry of Education in 2009. This report indicated that the schools in the capital are predominant in terms of population and resourcefulness. The students who live in the capital are generally consuming education which is much better in terms of quality. In addition to this they are also exposed a number of divergent opportunities. Generally these children have access additional opportunities as such private tuitions from high level instructors and advanced technical knowledge as well.

In line with this finding, Martin and Dowson (2009) found that home factors such as the ownership of home equipment (telephone, piano, electrical appliances or vehicles) parents' attitudes (aspiration, praise, reward or punishment), number of siblings, availability of own room, are important factors influencing students' examination results. Moreover, Jackson et al. (2006) found that there is significant association between access to internet and students' academic performance. They also added that children who used the internet more had higher scored on standardized tests of reading achievement.

CONCLUSION

The present study was an attempt to investigate the relationship between demographic factors and academic performance in the secondary schools in Maldives. Under the umbrella of demographic factors, it emphasized on age, gender and socioeconomic status. This study was guided with three main research questions, each of which was attached one of the three independent variables mentioned above. Therefore, the research questions were designed to examine if any of these variables were significantly related to students' academic performance.

The findings reported there was a significant association between age and academic performance. At the same time, it reported a significant association between socioeconomic status and academic performance. However, the researcher found no evidence to support the existing a significant association between gender and academic performance.

In reality, the age, gender and socioeconomic status are more closely observed by the schools in Maldives. The schools would have a broad understanding regarding the nature of the students' backgrounds. Firstly, teachers need to educate themselves regarding the demographic factors and its implications to the students' outcomes, which is required that teachers open their eyes for the contemporary studies concerned with the academic performance and teachers need to have much individualized focus on the older students having in mind that the need additional coaching than the younger students. Secondly, schools administers are required to take such things into consideration as age, gender and socioeconomic status in classifying the students into various classes. Besides, the schools should develop a guideline or handbooks in for allocating students into specific classes and promoting them from one level to another.

Last but not least, future studies on this subject would be beneficial to understand more deeply the relationship between demographic factors and academic performance by adopting a mixed methodology incorporating both quantitative and qualitative research methods. Moreover, it would be more interesting to include both grade 8 and 9 of lower secondary schools in Maldives for future research on this subject. Finally, it is hoped that the present study would contribute to the body of knowledge and facilitate in providing people in charge at the schools and governing agencies with these determinants of academic performance in order to reach solutions for enhancing quality and outcomes of secondary schools in the Maldives.

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