

SHATTERING THE GLASS CEILING: DETERMINING THE FACTORS CONTRIBUTING TO ACHIEVING GRADE 7 OR GRADE 12 FOR CITIZENS IN LIMPOPO

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DECLARATION

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ABSTRACT

People obtain skills through improved educational levels which allow them to secure more permanent higher-earning jobs, resulting in better living conditions. Irrespective of government policies and programmes to reduce illiteracy and increase the education standard, Limpopo experienced low Grade 12 pass rates of 66.9% and 71.8% in 2012 and 2013 respectively. The latter pass rate remains below the national average of 73.9%. This article investigates the socio-demographic, socio-economic and service-delivery factors contributing to attaining both Grade 7 and Grade 12 in Limpopo. Descriptive statistics from the General Household Survey 2013 data were calculated to observe the profile information of those citizens in Limpopo who only managed to obtain Grade 7 as well as those who managed to obtain Grade 12. Thereafter, two logistic regression models were computed to explore the contributing factors to attaining Grade 7 or Grade 12. The results indicate that females, people residing in urban formal areas, households with flush toilets, and households using electricity for cooking have higher odds of obtaining Grade 7. Females, children and youth, and people residing in households with a vehicle, refrigerator, and access to internet have higher odds of attaining Grade 12. Additionally, a total monthly household income of R6 001 – R30 000 increases the odds of attaining Grade 12. Thus, overall, socio-demographic factors play an important role in completing Grade 7, while socio-economic factors are dominant determinants of attaining Grade 12. Significant policy implications to improve the Grade 7 and Grade 12 pass rates are discussed.

Keywords and phrases: Limpopo; Educational performance; Achieving Grade 7; Achieving Grade 12; Socio-demographic characteristics; Socio-economic characteristics; Service-delivery situation.

OPSOMMING

Mense verwerf vaardighede deur verbeterde opvoedkundige vlakke wat hulle in staat stel om meer permanente, beter betaalde werk te verseker, wat beter lewensomstandighede tot gevolg het. Limpopo het 'n lae Graad 12 slaagsyfer van 66.9% en 71.8% in 2012 en 2013, onderskeidelik, ondervind, ongeag die regering se beleide en programme om ongeletterdheid te verminder en opvoedkundige standaarde te verhoog. Die laasgenoemde slaagsyfer bly onder die nasionale gemiddelde van 73.9%. Hierdie artikel ondersoek die sosio-demografiese, sosio-ekonomiese en diensleweringfaktore wat bydra tot die verkryging van Graad 7 en Graad 12 in Limpopo. Beskrywende statistieke vanaf die Algemene Huishoudelike Opname 2013 data was bereken om die profielinligting van daardie burgers in Limpopo wat net daarin geslaag het om Graad 7 te kry, sowel as daardie wat daarin geslaag het om Graad 12 te kry, waar te neem. Daarna is twee logistieke regressies bereken om die faktore wat bydra tot die verkryging van Graad 7 of Graad 12 te verken. Die resultate toon dat vrouens, mense wat in stedelike formele areas bly, huishoudings met spoeltoilette, en huishoudings wat elektrisiteit vir kook gebruik, 'n groter kans het om Graad 7 te verkry. Vrouens, kinders en die jeug, en mense wat in huishoudings bly wat 'n voertuig, yskas, en internettoegang het, het 'n groter kans om Graad 12 te verkry. 'n Totale huishoudelike maandelikse inkomste van R6 001 – R30 000 verhoog verder die kanse om Graad 12 te verkry. Dus, oor die algemeen, speel sosio-demografiese faktore 'n belangrike rol in die afhandeling van Graad 7, terwyl sosio-ekonomiese faktore 'n dominante determinant in die verkryging van Graad 12 is. Beduidende beleidsimplikasies om die Graad 7 en Graad 12 slaagsyfers te verbeter word bespreek.

Trefwoorde en frases: Limpopo; Opvoedkundige prestasie; Verkryging van Graad 7; Verkryging van Graad 12; Sosio-demografiese karaktereienskappe; Sosio-ekonomiese karaktereienskappe; Diensleweringssituasie.

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ABBREVIATIONS AND ACRONYMS

	Page
DBE	Department of Basic Education.....2
OECD	Organisation for Economic Co-operation and Development.....1
NDP	National Development Plan.....1
NPC	National Planning Commission.....1
Stats SA	Statistics South Africa.....2

SECTION 1: SETTING THE SCENE

1.1 INTRODUCTION

Achieving a good-quality and higher education level enables citizens to develop skills which allow them to secure better jobs with higher incomes. This improves their socio-economic status and life expectancy. It has been found that the life expectancy of men with a tertiary education increases with 51 years compared to only 43 years for men without a tertiary education, while infant and child mortality is reduced if their mothers have a higher education level (Hale et al. 2009; Organisation for Economic Co-operation and Development [OECD] 2013). Improved education also leads to more productive workers, resulting in increased economic growth, and allows for a politically stable environment where citizens can learn and practise their rights (Anderson 2000; Center for Global Development 2013).

The South African education system evolved from the colonial era and apartheid Bantu Education Act 47 (1953) which segregated and oppressed Black people's access to education, to the current era of universal compulsory access to education to all people aged 7 years and older. The current educational dispensation is legislatively binding by the National Policy Act 27 (1996), the Schools Act (1996), Education Laws Amendment Act 24 (2005) and more recently by the National Development Plan (NDP) (2011) that advocates investment in scarce-skills and educator-training programmes, further training for poor-performing learners, and infrastructure development (Byrnes 1996; Department of Basic Education [DBE] 2013; Government Gazette 1998; National Planning Commission [NPC] 2011). The National School Nutrition Programme was also implemented with the aim of providing daily food to learners (Dielteins & Meny-Gilbert 2012; Gardiner 2008; Madhavan & Thomas 2005).

Although significant improvements in educational performance are observed throughout the country, Limpopo has been experiencing several socio-economic and school-related challenges in this regard. The socio-economic challenges relate to the fact that Limpopo is a predominantly rural province which is associated with poverty and poorly allocated basic resources and services communities (Gardiner 2008; Statistics South Africa [Stats SA] 2013). The school-related factors relate to the poor and corrupt management of schools in the province, the lack of delivery of textbooks, stationery and other learning material and the number of learners being too large per class, making it difficult for teachers to teach effectively (Daily Maverick 2012; Makola 2005; Sowetan Newspaper 2012; Stats SA 2013).

These socio-economic conditions and school-related factors have negatively affected the drop-out rates and pass rates of children in Limpopo; for example, the Grade 12 pass rate was 63.9% in 2011, 66.9% in 2012 and 71.8% in 2013 (the second lowest pass rate in the country after the Eastern Cape for 2013, and this percentage is below the national average of 73.9%) (Department of Basic Education 2012; 2013). Furthermore, the Grade 12s in extremely rural regions (e.g. Sekhuhume District Municipality) constantly have lower pass rates than those in urban regions (e.g. Capicorn) (Makola 2005), while the attendance and pass rates of the grades below Grade 12 are also problematic and adult illiteracy and general illiteracy remain unprecedented (Stats SA 2012, 2013).

Limpopo's continued poor educational performance will result in a lagging productivity of workers, which negatively influences economic growth and socio-economic development of communities. Consequently, this article has two aims: 1) to determine the socio-demographic, socio-economic and service-delivery characteristics of

citizens who have attained Grade 7 and those who attained Grade 12 in Limpopo; and 2) to determine the socio-demographic, socio-economic and service-delivery factors contributing to achieving Grade 7 or Grade 12 for citizens in Limpopo. This study used Grade 7 as an indicator for Limpopo's citizens being able to complete primary education, while Grade 12 is an indicator of their being able to complete secondary education. Attainment of Grade 7 is measured by using people aged 14 years and above, while Grade 12 attainment is measured by using people aged 19 years and above.

SECTION 2: FACTORS CONTRIBUTING TO EDUCATIONAL PERFORMANCE: EXAMPLES FROM THE LITERATURE

The most important theoretical concepts associated with educational performance are socio-demographic characteristics, socio-economic conditions, school-related factors, and communication skills (Lumpton 2005; Mustag & Khan 2012; O'Connor 2009). The literature for this study focused only on the socio-demographic, socio-economic conditions and service-delivery factors.

2.1 SOCIO-DEMOGRAPHIC FACTORS INFLUENCING EDUCATIONAL PERFORMANCE

Several socio-demographic factors influence the educational performance of learners, including the gender of a learner, teenage pregnancy, the marital status of the parents and the household size. Boys and girls are not treated equally in all communities, resulting in varying educational performances. Furthermore, girls mature physically and psychologically faster than boys, thus sometimes increasing their educational performance (Anderson 2000). In Australia, Mexico and South Africa, girls have equal opportunities to boys, resulting in the increased educational performance by girls (Anderson 2000; Consedine & Zapalla 2001; Van Der Berg 2008). Conversely, girls perform worse than boys in Pakistan due to more resources being invested in boys' education, while findings in sub-Saharan Africa were inconclusive about this (Aslam & Siddiqui 2003; Lee & Zuze 2011).

Additionally, some girls fall pregnant or marry, resulting in their losing focus on schoolwork and dropping out of school. Pregnancy and marriage are the dominant factors contributing to around 40% of girls

dropping out of school in Cameroon, while similar scenarios play itself out in Burkina Faso, Côte d'Ivoire and Guinea (Lloyd et al. 2008). Pregnant girls in rural parts of KwaZulu-Natal and black/African girls from urban areas in Cape Town, either remain in school or return to finish their studies after giving birth. These South African studies also indicated that girls had lower levels of completion and higher rates of repetitions even before falling pregnant, indicating that other factors could also have been contributing to their poor educational performance (Grant & Hallman 2008; Marteleto et al. 2008).

Parents should provide a supportive environment with all the required resources to their children. Additionally, parents who participate in school activities provide support for children to improve their educational performance, as they invest their time and resources in improving the behaviour and education of their children (Trotman 2001). Parents with poor socio-economic conditions in the USA, District 3 of Tshwane and Vhembe district in South Africa participate less in the activities of their children due to the fact that they focus most of their time and efforts on providing basic necessities like food for the household (Mji & Makgato 2006; Mudzzielana 2012; Trotman 2001). Reading skills of learners in Tennessee and Leon were improved by the parents providing a good learning environment at home, consisting of books, computers, etc., and through parents' active involvement in school activities of their children, including contributing financially towards improving the resources and facilities of the school (Anderson 2000; Klein 2008). Having both parents in the household is found to improve the performance of learners in both reading and mathematics in South Africa (Van Der Berg 2008).

Irrespective of the income or employment status of the parents, learners from households with divorced or separated parents in Germany are less likely to attain their senior educational certificate or

higher qualifications because of lower household resources and income (sometimes fuelled by the unstable employment status of the mother) needed to support the educational requirements of the children. This situation worsens over time (Francesconi et al. 2010). Similar patterns are observed in female-headed households in South Africa and in rural areas of China with poorer educational performance compared to male-headed households (Van Der Berg 2008; Yu & Hannum 2007). The effect of residing in divorced or separated-parent households further impacts the educational performance of girls more negatively than for boys, because in many developing countries, girls are less likely to receive financial and emotional support compared to boys (Madhavan & Thomas 2005; Yu & Hannum 2007).

The household size, i.e. having more siblings, could also negatively impact educational performance due to siblings competing for the parents' time and resources. Having older brothers negatively influenced the performance in mathematics, but not in languages in rural China. This is due to the fact that mathematics is more demanding as compared to languages and more attention and resources are mostly directed towards supporting boys than girls in rural parts of China and Pakistan (Aslam & Siddiqui 2003; Yu & Hannum 2007). Additionally, those with siblings who have repeated a grade in Mexico have an increased chance to have lower reading scores and to drop out due to parents investing more time on the struggling sibling (Anderson 2000).

2.2 SOCIO-ECONOMIC FACTORS INFLUENCING EDUCATIONAL PERFORMANCE

The socio-economic conditions of learners, including the highest education level and employment status of parents, household income and conditions, nutrition and the type of neighbourhood in which

learners reside, all influence learners' educational performance (Gewirtz 1998).

Higher educational levels of the parents enable them to assist their children in better comprehending their schoolwork. The aforementioned was observed in Australia, New Hampshire and in the rural areas of China (Anderson 2000; Consedine & Zapalla 2001; Toutkoushian & Curtis 2005). Children with parents who have post-graduate qualifications are more likely to be employed while at school in Canada – also this employment does not negatively affect their grades (Montmarguette et al. 2007). The mother's higher educational performance reduced drop-out rates in Leon and increased the reading and mathematical capabilities of children in South Africa. Conversely, the father's higher educational performance improved learners' educational performance in Pakistan (Anderson 2000; Aslam & Siddiqui 2003; Van Der Berg 2008). The enrolment of boys and girls in Indian villages increases with the higher levels of education of the father, while a higher educational level of the mother is associated with higher enrolment levels of girls. This indicates the liberal approach followed by the Indian fathers towards the education of children irrespective of gender, and the mothers strive for the improvement of girls' rights in society (Dostie & Jayaraman 2006).

If parents are employed they will earn a household income, which allows them to financially support the children with their educational requirements. Children whose parents are unemployed and work part-time in Leon and Canada (where parents earn a minimum wage) are tempted to find their own employment, which distracts them from their studies (Anderson 2000; Montmarguette et al. 2007). Girls are more negatively affected by the unemployment of their parents in Cape Town, because communities in less developed countries tend to invest their household resources in boys rather than girls, resulting in the

latter group being more vulnerable (Aslam & Siddiqui 2003; Lee & Zuze 2011). High unemployment levels in the Vhembe district, in Limpopo province, result in fewer household resources and ultimately a poorer educational performance of learners (Marteleto et al. 2008; Mudzzielana 2012).

The socio-economic status of the household also influences the ability of children to obtain a higher educational level. Having a higher household income increased the educational performance of learners in Australia and Nashville, while a decrease in the chances of school drop-outs was experienced in Cape Town. A lower household income is associated with poor health, a lack of ambition and a low self-esteem, which ultimately reduces the educational performance of a learner (Consedine & Zapalla 2001; Klein 2008; Manning & Baruth 1996; Marteleto et al. 2008). This situation is especially prevalent in rural China, sub-Saharan African countries and in the Vhembe district of Limpopo, where poorer children perform worse in school. This is because poorer families struggle to support their children in terms of their educational needs (Mudzzielana 2012; Van Der Berg 2008; Yu & Hannum 2007). Conversely, the household's socio-economic status does not seem to influence the educational performance of learners in India and Pakistan (Aslam & Siddiqui 2003; Desai 1991). Additionally, learners residing in households receiving social grants perform worse in their education and some even drop out of school completely. This situation is especially applicable amongst learners of migrant families in the Middle East and African countries, Leon in Mexico and in Australia (Anderson 2000; Consedine & Zapalla 2001).

The socio-economic situation of the household directly impacts the households' ability to own household goods and assets that will assist children in improving their educational performance. Ownership of stationery, textbooks, bicycles and livestock, and having more rooms in

the house, increase the educational performance of boys in India and rural China, while similar results are observed in South Africa (Desai 1991; Van Der Berg 2008; Yu & Hannum 2007).

The household's socio-economic status also influences its ability to provide nutrition to learners, which will assist them in concentrating more in school, and consequently improve their educational performance. In China, cases of prolonged hunger negatively influenced the educational performance of children, while in other cases in China the lack of nutrition more negatively affected the language scores of younger learners than older ones (Yu & Hannum 2007). Conversely, learners residing in poor households receiving reduced-price meals had lower marks for English (Toutkoushian & Curtis 2005).

2.3 SERVICE-DELIVERY FACTORS INFLUENCING EDUCATIONAL PERFORMANCE

The socio-economic status of the household also influences the type of neighbourhood in which the households will reside. A lack of proper road infrastructure and housing opportunities have negatively affected the educational performance of learners in Australia while not having piped water and electricity in the dwelling negatively affects the secondary educational outcomes of boys and girls in Mexico (Consedine & Zapalla 2001; Mier et al. 2003). Learners residing in poor neighbourhoods with lack of adequate infrastructure and service delivery (including electricity, piped water and sanitation) in Leon in Mexico, Brazil and India are found to have higher rates of absenteeism and poor performance in school (Anderson 2000; Barde 2014; Desai 1991). Likewise, lack of basic services reduced the reading capabilities of learners in Zimbabwe. Not having piped water and electricity in

communities is associated with poor hygiene and health, causing higher rates of learner absenteeism linked to poor performance (Kanyongo et al. 2006). Black/African people in Cape Town that reside in poorly serviced areas experience similar problems in their educational outcomes (Bayat et al. 2014).

To conclude, the literature review generally indicates that certain socio-demographic characteristics, poor socio-economic conditions and a lack of infrastructure and service delivery negatively influence the educational performance of learners. As a predominantly rural province, these factors are likely to be more negatively pronounced in the case of Limpopo. Consequently, this article will determine the socio-demographic, socio-economic and service-delivery characteristics of citizens who have attained Grade 7 and those who attained Grade 12 in Limpopo, and thereafter determine the socio-demographic, socio-economic and service-delivery factors contributing to achieving Grade 7 or Grade 12 for citizens in Limpopo.

SECTION 3: METHODOLOGY

This empirical study followed a positivistic methodological approach to determine the factors contributing to citizens in Limpopo achieving Grade 7 or Grade 12. This study used Grade 7 as an indicator for Limpopo's citizens being able to complete primary education, while Grade 12 is an indicator of their being able to complete secondary education. The National Policy Act 27 of 1996 states that a person should start Grade 1 when he/she is 7 years old, resulting in a person being 13 years old when doing Grade 7 and 18 years old when doing Grade 12 (Government Gazette 1998). To ensure that the study population is eligible to achieve either Grade 7 or Grade 12, citizens aged 14 years and above were selected and examined for Grade 7. Likewise, citizens aged 19 years and above were selected and examined for Grade 12.

Socio-demographic, socio-economic and service-delivery variables (Table 3.1) were extracted from the General Household Survey (GHS) 2013 to first calculate percentage distribution using STATA version 12, a statistical programme, in order to provide a profile overview of the citizens who were eligible to obtain Grade 7 or Grade 12 in Limpopo. The percentage distributions are used to determine the percentage in each group of a variable. They are further used to compare two or more groups that differ in sample size (Berenson et al. 1998).

Next, a logistic regression model was computed to determine the factors contributing to citizens in Limpopo being able to achieve Grade 7. The study population in this model was citizens who were aged 14 years and older. A second logistic regression model was calculated to determine the factors contributing to citizens in Limpopo being able to achieve Grade 12. The study population in this model was citizens who

were aged 19 years and older. The dependent variables were coded categorically with a code of (1) indicating "success" of a citizen in achieving either Grade 7 or Grade 12, while a code of (0) indicates "failure" of a citizen in achieving either Grade 7 or Grade 12 (in other words, they have not completed either Grade 7 or Grade 12). The independent variables were the same for both logistic regression models and included socio-demographic, socio-economic and service-delivery factors. Household level data was extracted with the aim of gathering individual, household and community factors contributing to the education performance of household members. All independent variables were coded as categorical. The precision of these two logistic regression models was set at 95%. The odds are used to interpret the results of the logistic regression models. Odds refer to the ratio of the probability of occurrence of an event to the probability of that event not occurring. An odd of 1.00 means that there is no difference in the probability of an event occurring between the variable category and its reference group. Odds above 1.00 indicate higher probability of an event to occur while odds below 1.00 indicate lesser probability of an occurrence (Fu-Lin Wang 2011).

Table 3.1 Description of variables used in the study

Name of variable and type	Coding of variable	Type of variable	Reason for using the variable
Dependent variables:			
• Grade 7	Yes (1) No (0)	Categorical	Completion of Grade 7 is an indication that a person has attained both foundation and intermediate educational skills in school.
• Grade 12	Yes (1) No (0)	Categorical	Completion of Grade 12 indicates that a person has completed basic education and is formally legible to enrol for tertiary education or join the formal employment sector.

Continued overleaf

Table 3.1 Continued

Name of variable and type	Coding of variable	Type of variable	Reason for using the variable
Independent variables			
Socio-demographic variables			
• Gender	1 = Male 2 = Female	Categorical	The variable is used to establish if the gender of a person has a bearing on his/her educational performance.
• Age group	1 = 7 – 14 2 = 15 – 34 3 = 35 – 64 4 = 65+	Categorical	The variable is used to determine the age groups which are performing better or worse educationally.
• Population group	1 = Black African 2 = Coloured 3 = Indian/Asian 4 = White	Categorical	The variable is used to determine if education performance varies amongst different population groups or not.
• Marital status of household head	1 = Married 2 = Living together like married couple 3 = Divorced/separated 4 = Widow/widower 5 = Single	Categorical	The variable is used to establish if the marital status of the household head has an effect on the educational performance of the child/dependent.
• Household head's spouse residing in dwelling	1 = Yes 2 = No	Categorical	This variable is used to determine if being raised in a united or single-headed household has an effect on educational performance of members of the households.

Continued overleaf

Table 3.1 Continued

Name of variable and type	Coding of variable	Type of variable	Reason for using the variable
Independent variables			
Socio-demographic variables			
<ul style="list-style-type: none"> Parent alive 	1 = Both alive 2 = One alive 3 = Both dead	Categorical	Parents form the major source of income, support and provision of a suitable environment and materials for the education of the child.
Socio-demographic variables			
<ul style="list-style-type: none"> Household size 	1 = 1–3 2 = 4–6 3 = 7+	Categorical	The variable is used to determine the effect of the number of members in the household (sharing common space and resources) on the members' educational performance.
Socio-economic variables:			
<ul style="list-style-type: none"> Geographic type 	1 = Urban formal 2 = Urban informal 3 = Tribal 4 = Rural formal	Categorical	This variable is used to determine if educational performance of people varies by geographic type. Urban formal areas are provided with basic services like piped water, electricity, etc. by the government while the other areas are not.
<ul style="list-style-type: none"> Employment status of head of household 	1 = Employed 2 = Unemployed	Categorical	The variable is used to establish whether the employment status of the head of the household has an effect on the educational performance of members of the household. Employment of head of household generates income required by the household to survive and support educational needs of the learners.

Continued overleaf

Table 3.1 Continued

Name of variable and type	Name of variable and type	Name of variable and type	Name of variable and type
Independent variables			
Socio-economic variables			
<ul style="list-style-type: none"> • Employment sector of household head 	1 = Formal 2 = Informal	Categorical	The variable is used to establish if working in the formal or informal sector has an effect on the educational performance of members of the household. Formal sectors areas are associated with better working conditions and salaries whiles the conditions in the informal sector are less conducive and associated with lower salaries.
<ul style="list-style-type: none"> • Total monthly household income 	1 = Low (R0 – R6 000) 2 = Middle (R6 001 – R30 000) 3 = High (R30 001+)	Categorical	This variable is used to establish the effect of the total monthly household income on educational performance of household members. Higher incomes are expected to better support educational needs of the learner.
Socio-economic variables			
<ul style="list-style-type: none"> • Main source of household income 	1 = Salary 2 = Business 3 = Remittance 4 = Pension 5 = Social grant 6 = Agricultural products (sales) 7 = Other 8 = No income	Categorical	This variable indicates the main source of income for the household which in turn provides for the educational needs of the members of the household.

Continued overleaf

Table 3.1 Continued

Name of variable and type	Name of variable and type	Name of variable and type	Name of variable and type
Independent variables			
Socio-economic variables			
• Household has a vehicle	1 = Yes 2 = No	Categorical	This variable reflects the wealth associated with the household. It is specifically associated with high incomes and doing well financially.
• Household has a fridge	1 = Yes 2 = No	Categorical	This variable reflects the wealth associated with the household. It is specifically associated with medium wealth/income of the household.
• Household access to internet	1 = Yes 2 = No	Categorical	Internet access in the household is a reflection of access to information as well as an indicator of the household's ability to provide suitable study material/environment for learners.
• Main type of dwelling	1 = Brick house on stand 2 = Traditional house 3 = Flat/apartment/complex/townhouse 4 = Backyard structures 5 = informal dwelling/shack 6 = Room or granny flat on stand 7 = Other	Categorical	This variable serves an indicator of the wealth of the household. Household wealth is useful in providing educational support to the learner (e.g. school funds, learning material, etc.)

Continued overleaf

Table 3.1 Continued

Name of variable and type	Name of variable and type	Name of variable and type	Name of variable and type
Independent variables			
Socio-economic variables			
<ul style="list-style-type: none"> Quality of dwelling units 	1 = Good 2 = Average 3 = Poor	Categorical	This variable reflects the economic status of the household. It indicates if the household has the financial means to improve on the quality of the dwelling (owned, rented or inherited) or not.
Service delivery factors			
<ul style="list-style-type: none"> Household access to flush toilet 	1 = Yes 2 = No	Categorical	This variable is an indication on whether the household/ community is being serviced and provided with public infrastructure by the local municipality or not.
<ul style="list-style-type: none"> Household main source of drinking water 	1 = Borehole/piped water in stand 2 = Rivers/rain/ stagnant water/etc. 3 = Communal/ neighbour's tap	Categorical	Besides being an indication of the provision of public services and infrastructure by the government, this variable also indicates the economic status of the household.
<ul style="list-style-type: none"> Household access to electricity for lighting 	1 = Yes 2 = No	Categorical	This variable is an indication of whether the community is being serviced and provided with public infrastructure by the local municipality or not.
<ul style="list-style-type: none"> Household use of electricity for cooking 	1 = Yes 2 = No	Categorical	This variable is an indication of whether the community is being serviced and provided with public infrastructure by the local municipality or not. The variable further indicates the economic status of the household.

SECTION 4: PROFILE CHARACTERISTICS OF CITIZENS IN LIMPOPO WHO WERE ABLE TO ACHIEVE GRADE 7 OR GRADE 12

The socio-demographic, socio-economic and service-delivery characteristics of citizens in Limpopo who were able to achieve Grade 7 or Grade 12 are discussed.

4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

The socio-demographic characteristics include the gender, population group, age group, marital status of head of household, household head's spouse residing in dwelling, parent-alive status and household size. Males and females are more likely to obtain Grade 7 than Grade 12; while the percentage of males who have obtained Grade 7 and Grade 12 is higher than those of females (Figure 4.1). These patterns are attributed to the cultural and traditional practices that invest more in the education of boys than girls (Aslam & Siddiqui 2003; Lee & Zuze 2011).

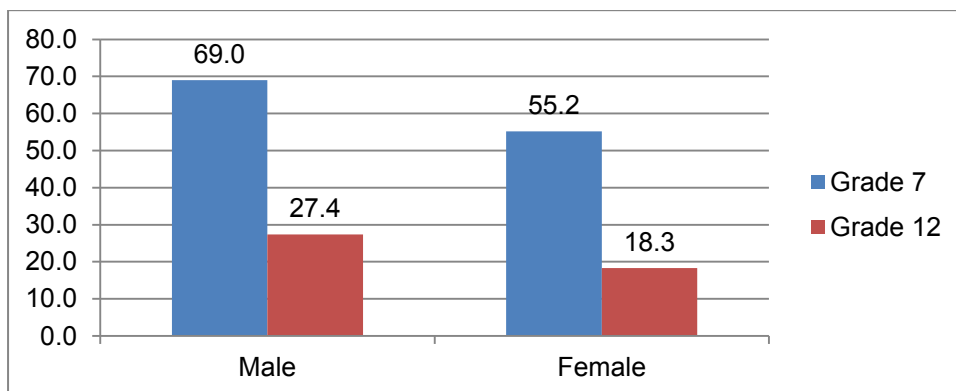


Figure 4.1 Percentage distribution of education performance by gender

Over 90% of Indian/Asian, white and coloured people have Grade 7, in comparison to slightly more than 60% of black people. Conversely,

above two-thirds of coloured, white and Indian/Asian people have obtained Grade 12, while only 20.8% of black people have done the same (Figure 4.2). The legacy of apartheid's racially segregated policies seems to still affect the poor educational performance among black/African people in Limpopo (Byrnes 1996).

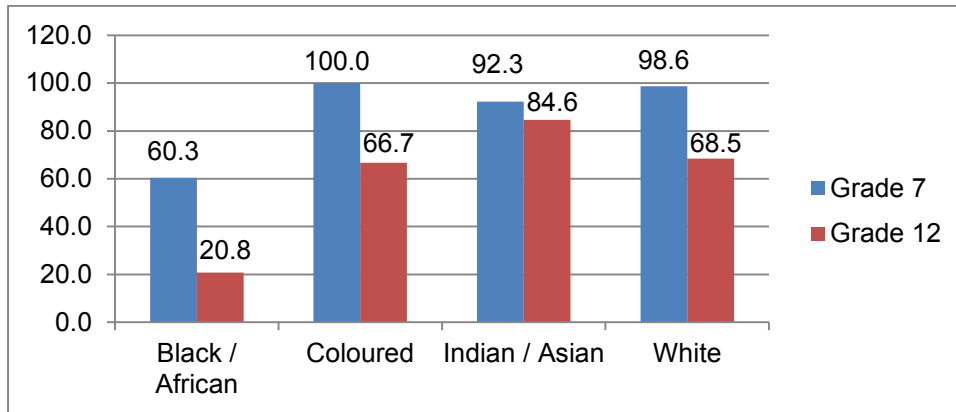
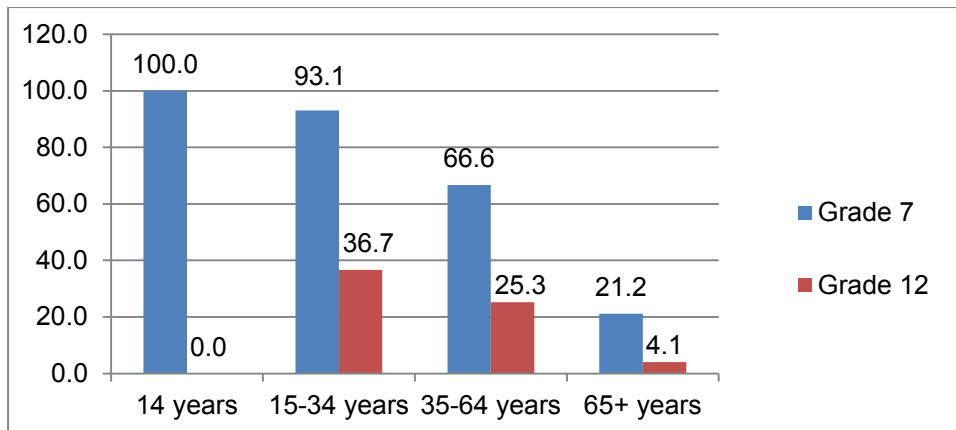


Figure 4.2 Percentage distribution of education performance by population group

Hundred per cent of people aged 14 years old have Grade 7, while just above 20% of people aged 65 years and above have Grade 7. The levels of Grade 12 decline from just above one-third among people aged 19-34 years to only 4.1% among people aged 65 years and more (Figure 4.3). The lower levels of education among older generations are the result of apartheid policies and conditions which deprived the majority of the population from attaining a higher education level, while the improvement in percentages of education among younger cohorts are the benefits of the current inclusive education policies (Byrnes 1996; Department of Basic Education 2013; Government Gazette 1998).



Note: Grade 7 achievement was computed for people 14 years and above while Grade 12 was computed for people 19 years and above.

Figure 4.3 Percentage distribution of education performance by age group

Above two-thirds of citizens with Grade 7 reside in households where the parents are married or co-habiting (Figure 4.4 & Figure 4.5). The same occurs in single-headed households, while the citizens who have obtained Grade 12 are below one-third for all of the marital status categories. Learners residing in households where both parents are present have higher levels of education than those learners residing in broken families. This is because the parents are better able to assist with homework and provide the learners with the financial and material resources (e.g. books and stationery) required to enhance their education (Francesconi et al. 2010; Van Der Berg 2008). Surprisingly, people residing with single parents have both higher Grade 7 and Grade 12 percentages.

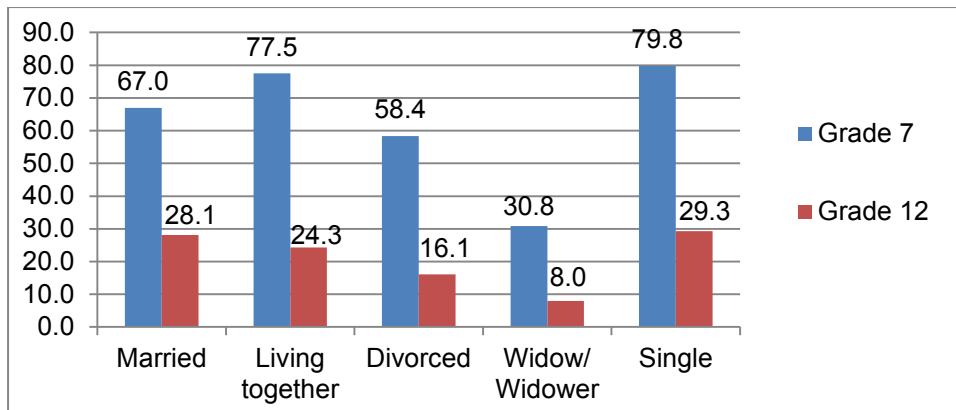


Figure 4.4 Percentage distribution of education performance by marital status of household member

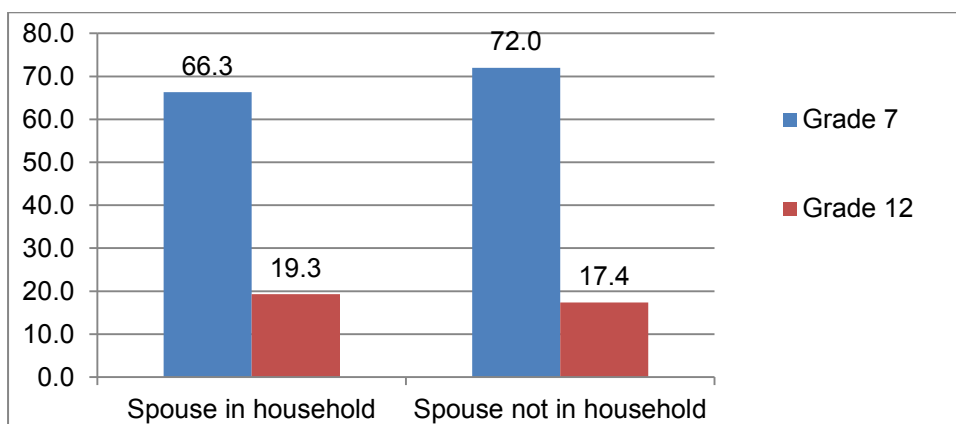


Figure 4.5 Percentage distribution of education performance by presence of household spouse

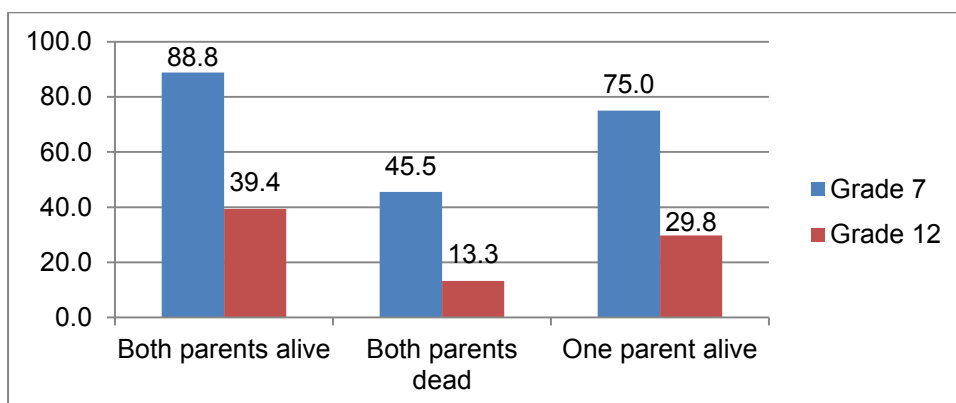


Figure 4.6 Percentage distribution of education performance by parent-alive status

Almost 70% of citizens residing in households with 1–3 members have Grade 7, while just above 40% of those residing in households with 7 or more people have Grade 7. Above a quarter of people residing in households with 1–3 members have Grade 12 and 10.0% of those residing in households with 7 and more members have Grade 12 (Figure 4.7). This shows that the higher the number of members in the household, the lower the education percentages. Competition for household resources like parents' time and funds for purchasing learning materials among children are contributing factors to the decline in education performance in bigger households (Yu & Hannum 2007).

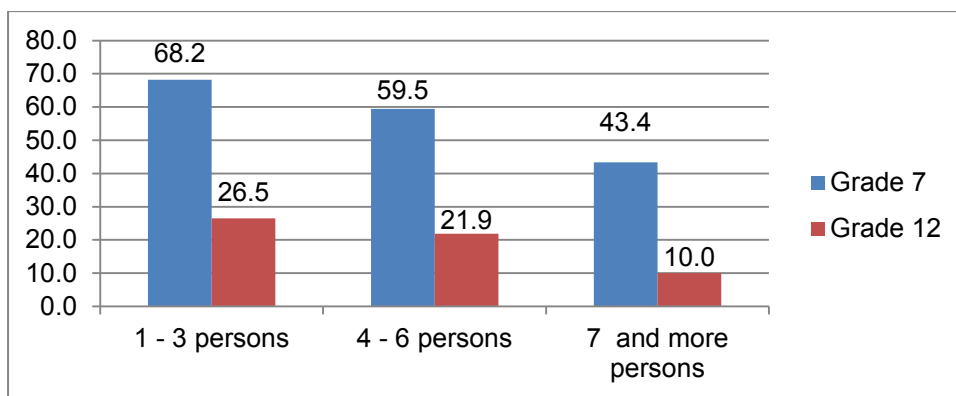


Figure 4.7 Percentage distribution of educational performance by size of household

4.2 THE SOCIO-ECONOMIC CHARACTERISTICS

The socio-economic characteristics include the geographic type, employment status of household head, employment sector of household head, total monthly household income, main source of household income, whether the household has a vehicle, refrigerator, access to internet, and the main type and quality of the dwelling.

Urban areas generally show higher levels of education as compared to rural settings. Urban formal areas have above 90% of people with Grade 7 while tribal areas have almost 60%. Urban areas have just below 60% of Grade 12 and tribal areas have 17.5% (Figure 4.8). Poorer and less serviced communities like tribal and rural areas have fewer and poorer quality facilities like schools to improve the educational performance of learners (Consedine & Zapalla 2001; Desai 1991).

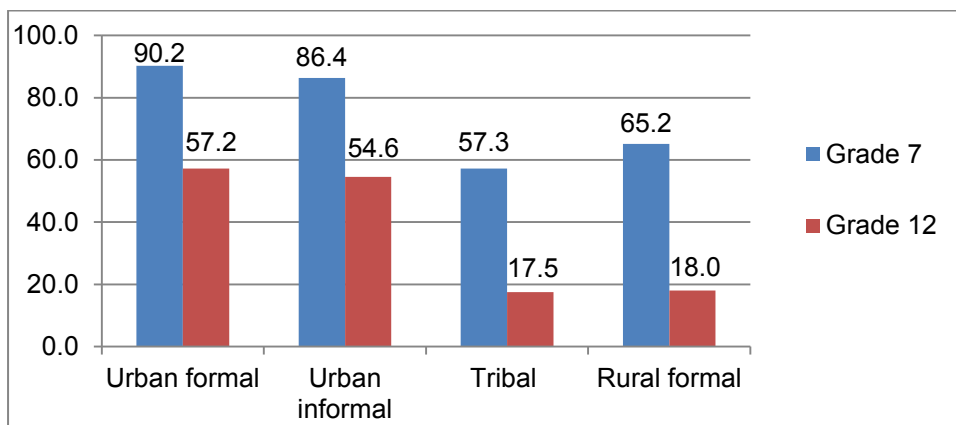


Figure 4.8 Percentage distribution of education performance by geographic type

If the household head is unemployed, the household members have lower percentages of Grade 7 and Grade 12. The levels of Grade 7 are above 80% among people residing in households with an employed head, while those residing with an unemployed head have just above 50% of Grade 7. Just above 40% of people residing with an employed household head have Grade 12, while 13.3% of those residing with an unemployed household head have Grade 12 (Figure 4.9). Unemployed parents are unable to provide their children with learning materials like books needed to support and improve their education (Mudzwielana 2012).

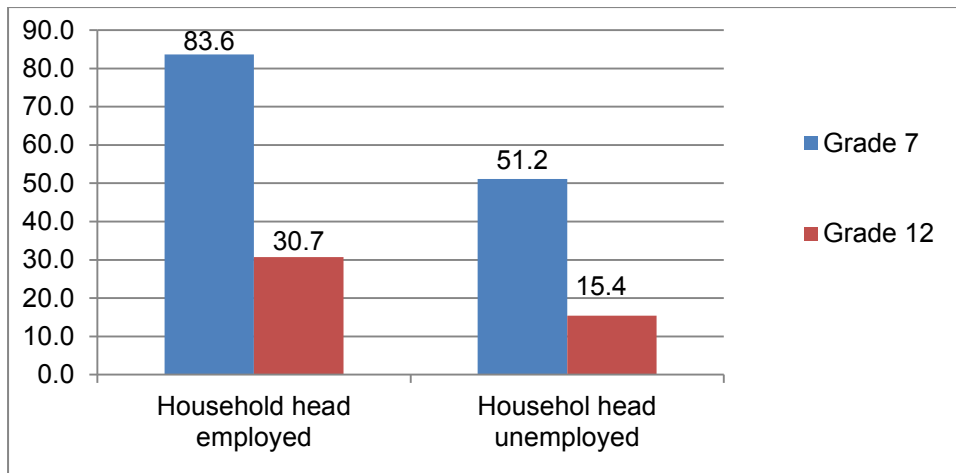


Figure 4.9 Percentage distribution of education performance by employment status of household head

People residing with household heads who are employed in the formal sector have higher percentages of both Grade 7 and Grade 12 as compared to those residing with household heads employed in the informal sector. People residing with a household head employed in the informal sector have a low 20.1% of Grade 12 (Figure 4.10). The formal sector provides better and more stable financial status to support educational requirements of children (Anderson 2000; Consedine & Zapalla 2001; Klein 2008; Marteleto et al. 2008).

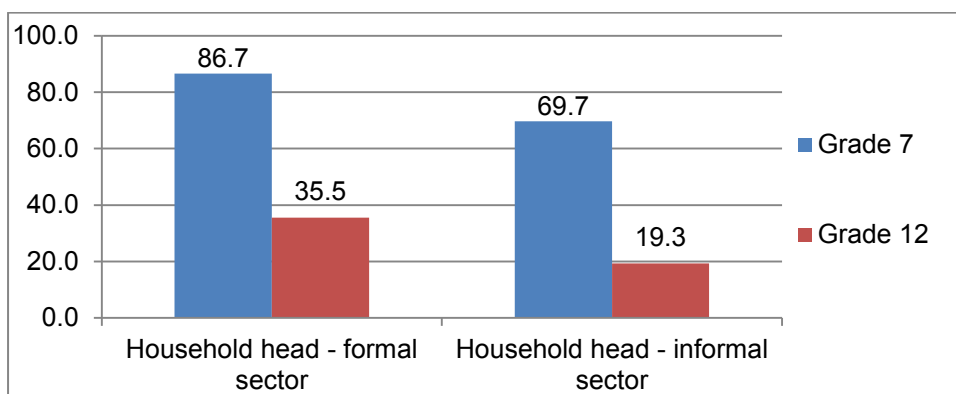
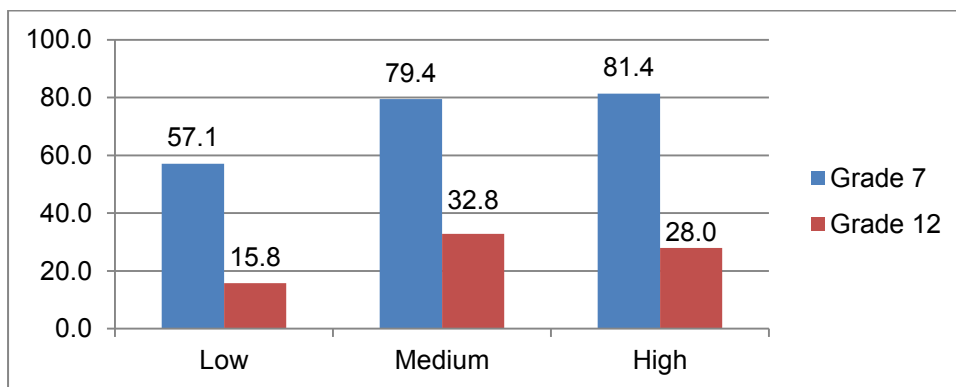


Figure 4.10 Percentage distribution of education performance by employment sector of household head

An increase in total monthly household income levels increases the chances of attaining Grade 7, while residing in a household with a total monthly income of R6 001 – R30 000 has the highest percentages of Grade 12. Higher incomes of R30 001 show a declined rate of below 30% (Figure 4.11). Higher incomes are generally associated with the ability of the household to provide for educational needs of children, resulting in improved performance (Anderson 2000; Consedine & Zapalla 2001; Klein 2008; Marteleto et al 2008).



Note: Low = R0 – R6 000; Middle = R6 001 – R30 000; High = R 30 001 and higher.

Figure 4.11 Percentage distribution of education performance by total monthly household income

More than 80% of people residing in households depending on a salary, business income and old-age pension have Grade 7, whereas just above 50% of those residing in households depending on social grants have Grade 7. Above one-third of people residing in households depending on business income have Grade 12; the least (14.1%) are found in households dependent on sales of agricultural products (Figure 4.12). Source of income reflects the household's financial status and stability. Residing in households with less/no income and those depending on social grants generally has a negative effect on the education performance of the learners, as these households generally have no or fewer incomes to support the educational needs of children (Consedine & Zapalla 2001; Toutkoushian & Curtis 2005).

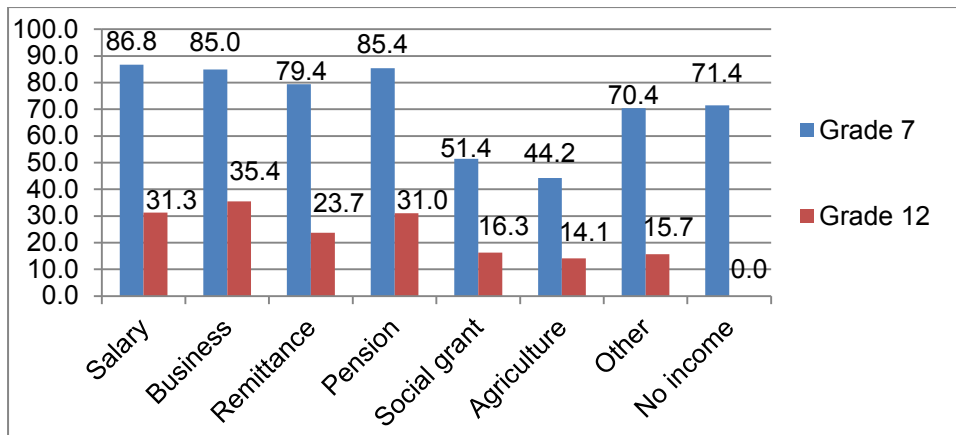


Figure 4.12 Percentage distribution of education performance by main source of household income

Staying in a household that does not own a vehicle, has no refrigerator or has no access to an internet connection results in lower levels of both Grade 7 and Grade 12 education. People having access to the internet at home have higher percentages of Grade 12, compared to those residing in households that own either a vehicle or a refrigerator (Figures 4.13–4.15). Households that are wealthy and have materials like livestock, own a house with many rooms, etc. are also able to provide learning materials like books, computers, etc. which assist a learner to study effectively at home (Desai 1991; Van Der Berg 2008; Yu & Hannum 2007).

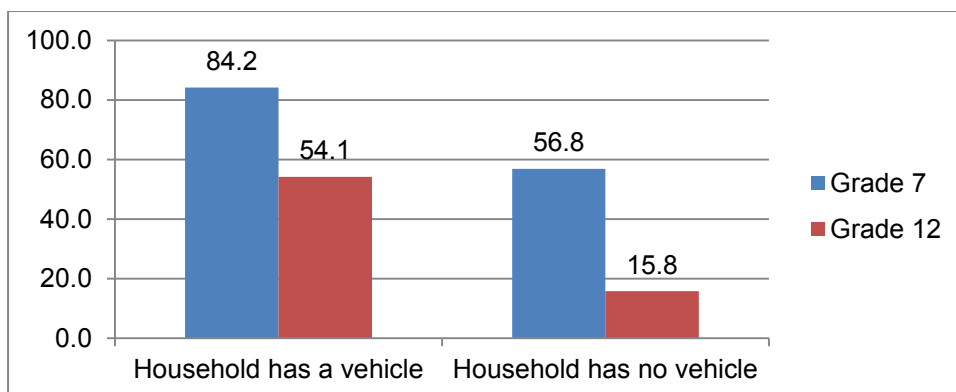


Figure 4.13 Percentage distribution of education performance by household vehicle ownership

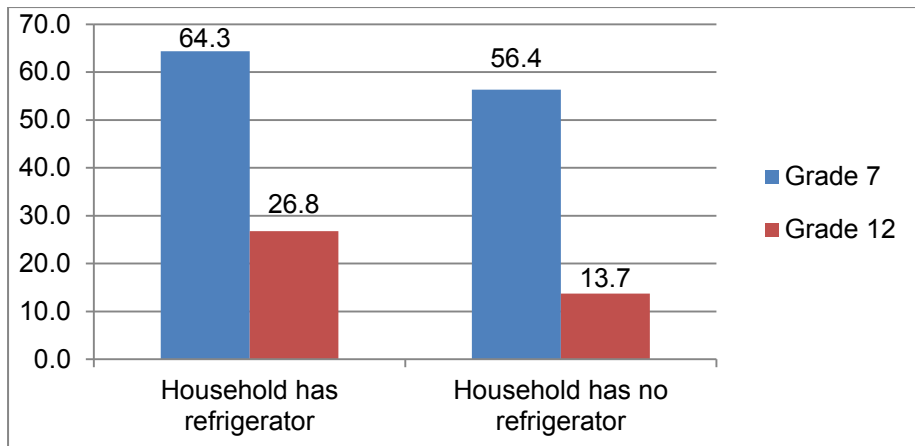


Figure 4.14 Percentage distribution of education performance by household refrigerator ownership

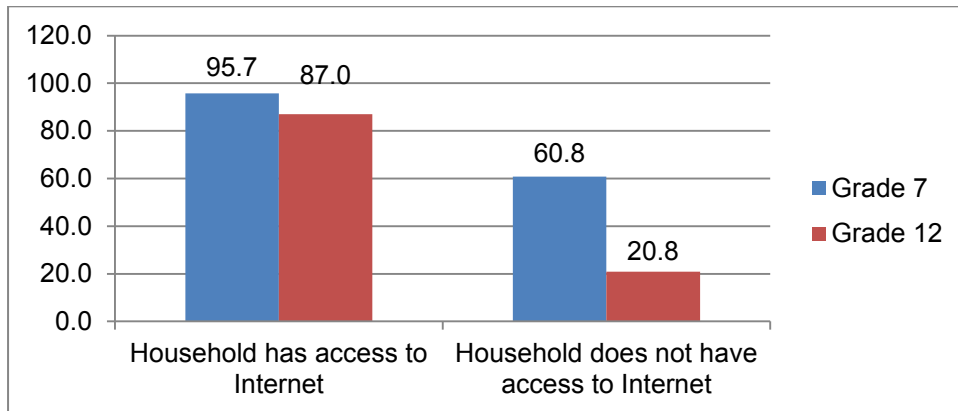


Figure 4.15 Percentage distribution of education performance by household access to internet

Hundred per cent of people residing in formal apartments/flats/complexes and above 90% of people residing in backyard structures (formal or informal) have Grade 7, while the lowest percentages are found in informal traditional dwellings (Figure 4.16). Informal traditional dwellings also have less than 10% of people with Grade 12, while almost two-thirds of people with Grade 12 are found in formal apartments/flats/complexes. Below 20% of people residing in formal brick houses in yards, informal dwellings and rooms/domestic workers quarters (formal or informal) have Grade 12. Formal bigger houses provide learners with space to study while at the

same time it reflects the financial status of the household, which supports the educational requirements of the learner (Desai 1991).

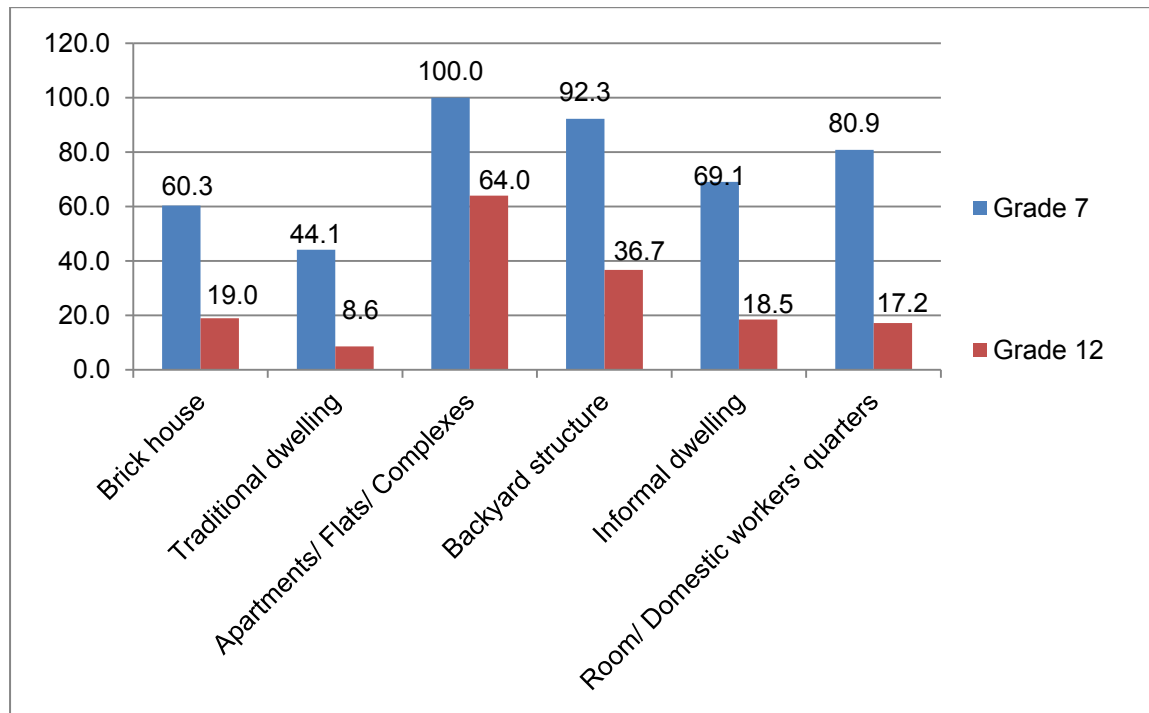


Figure 4.16 Percentage distribution of education performance by main type of dwelling

Above half of the people residing in average and good quality dwellings have Grade 7 while less than 20% have Grade 12 (Figure 4.17). Good quality of dwelling refers to a dwelling with walls made of either bricks or cement blocks/concrete and the roof made of cement block/concrete, corrugated iron/zinc, tiles, thatch/grass or asbestos. Average quality dwellings have bad walls but a good roof, or good walls but a bad roof. Good quality houses are associated with a better financial position of the household which in turn provides material support to the requirements of a learner (Desai 1991).

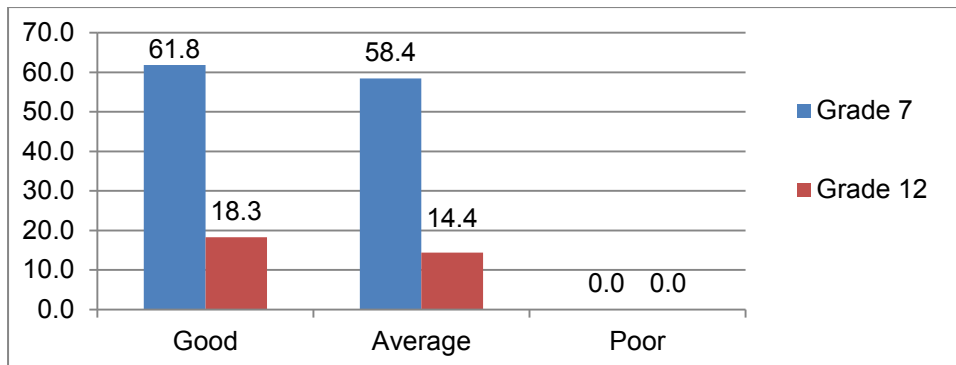


Figure 4.17 Percentage distribution of education performance by quality of dwelling

4.3 SERVICE-DELIVERY FACTORS

The service-delivery situation includes a household's access to a flush toilet, main source of drinking water, as well as access to electricity for lighting and usage of electricity for cooking. People coming from households with no flush toilet, no piped/borehole water in the yard and not using electricity for lighting and cooking have lower percentages of both Grade 7 and Grade 12 (Figures 4.18–4.21). Provision of services like electricity, piped water and flush toilets is associated with governments' general infrastructure provision, and citizen's improved hygiene and health – reducing absenteeism in schools which causes poor learner performance (Bayat et al. 2014; Mier et al. 2003). Furthermore, areas receiving no or fewer government services generally have lesser facilities like schools and libraries which assist in improving and supporting the education performance in these areas (Desai 1991).

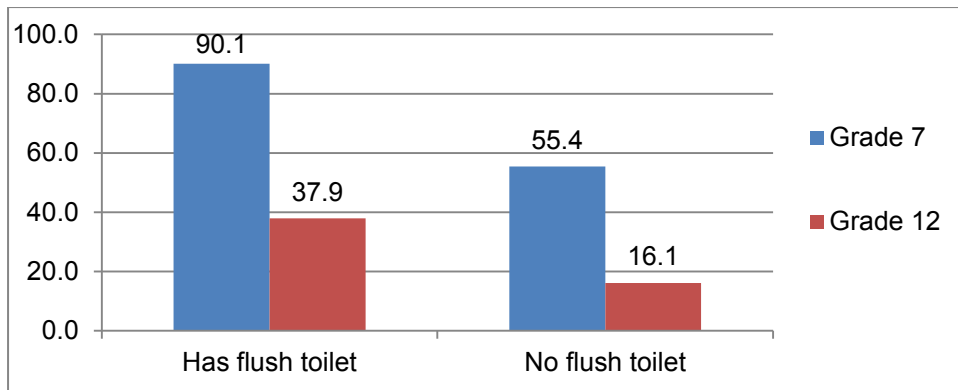


Figure 4.18 Percentage distribution of education performance by household access to flush toilet

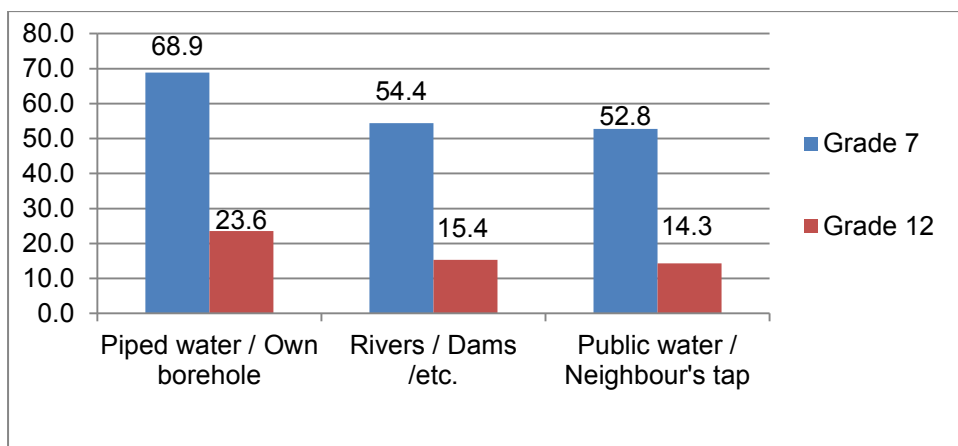


Figure 4.19 Percentage distribution of education performance by household main source of drinking water

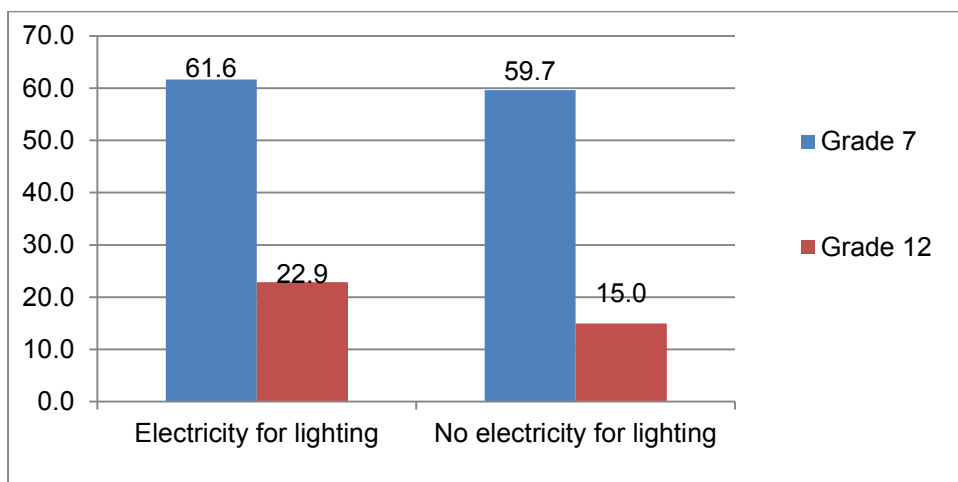


Figure 4.20 Percentage distribution of education performance by household connectivity to electricity for lighting

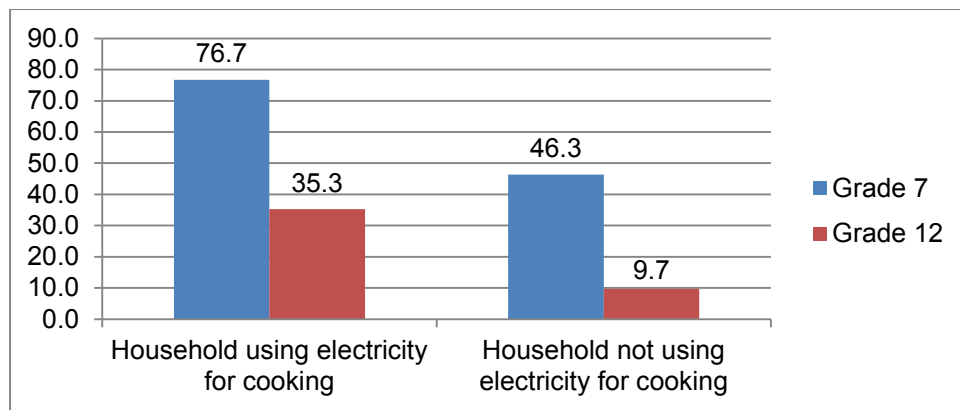


Figure 4.21 Percentage distribution of education performance by household usage of electricity for cooking

SECTION 5: FACTORS CONTRIBUTING TO OBTAINING GRADE 7 OR GRADE 12

This section discusses the factors that contributed to attaining Grade 7 and Grade 12 in Limpopo. The effects of socio-demographic, socio-economic and service-delivery factors are discussed.

5.1 SOCIO-DEMOGRAPHIC FACTORS CONTRIBUTING TO OBTAINING GRADE 7 OR GRADE 12

The odds of having Grade 7 are 2.88 times more likely among females as compared to males, while the odds of having Grade 12 are 2.50 times more for females as compared to males (Table 5.1). This is likely the result of universal access to education programmes in the country, offering both males and females the opportunity to basic education and the fact that girls mature physically and psychologically faster than boys. These put girls at an advantage to perform better in school as compared to boys (Anderson 2000; Government Gazette 1998). Furthermore, these results are generally observed in countries with better education policies like Mexico and Australia, with girls' grade repetition rates lower than those of boys (Anderson 2000; Consedine & Zapalla 2001, Mier et al. 2003).

The odds of having Grade 7 are 31.63 and 10.75 times more likely among people aged 15–35 years and 35–64 years respectively compared to those aged 14 years. These associations are, however, weak and do not provide precise estimates of odds ratios (Confidence Intervals: 6.53–153.12 and 2.89–39.97 respectively). However, people aged 35–64 years and 65 years and above have 0.56 and 0.09 times lower odds of attaining Grade 12 as compared to people aged 15–34 years. These

cohorts are likely to be the majority of people who had fewer chances of furthering their education during the apartheid period in South Africa (Byrnes 1996).

The odds of having Grade 12 are 0.34 times less likely among people residing in households with 7 and more members, compared to those residing in dwellings with 1–3 members. Data to confirm the same for attaining Grade 7 is not sufficient. Competition for household resources among members contributes to the decline in education performance in bigger households. The bigger households are also likely to practise their traditions and cultures – usually not promoting interest in education (Mier et al. 2003; Yu and Hannum 2007).

5.2 SOCIO-ECONOMIC FACTORS CONTRIBUTING TO OBTAINING GRADE 7 OR GRADE 12

The odds of having Grade 7 are 0.14 times less likely among people residing in urban informal areas compared to those residing in urban formal areas, while the odds of having Grade 12 among people residing in rural formal areas are 0.14 times less likely as compared to those in the urban formal areas (Table 5.1). There is, however, insufficient data to confirm the effect of urban formal areas on attaining Grade 7. Urban informal and rural formal areas are generally poorer; less serviced and receive fewer infrastructures like schools, libraries, etc. from the government, which affects the educational performance in these areas (Consedine & Zapalla 2001; Desai 1991).

People residing in households with a total monthly income of R6 001–R30 000 have 1.90 times higher odds of having Grade 12 as compared to those residing in households with a total monthly income of R0 –

R6 000. Higher household incomes provide learners with required learning materials like books, computers, etc., which support and improve their education (Consedine & Zapalla 2001; Klein 2008; Marteleto et al. 2008).

People residing in households with no vehicle or refrigerator have 0.34 and 0.43 times lower odds of having Grade 12 respectively as compared to those residing in households with these assets. Ownership of these assets reflects the economic capabilities of the household in providing learning materials like books, computers, etc. for support and improvement of education of the learners. Having fewer household assets has shown to produce below standard performance on Grade 12 in South Africa as compared to having more household assets. Household assets are associated with household wealth, which provides learners with materials like books and computers for supporting and improving their education (Makola 2005; Van Der Berg 2008).

Not having access to the internet at home reduces the odds (0.08) of attaining Grade 12 as compared to residing in households with access to the internet. Household ownership of learning materials like books, computers, etc. provides learners with the required educational support (Desai 1991; Van Der Berg 2008).

5.3 SERVICE-DELIVERY FACTORS CONTRIBUTING TO OBTAINING GRADE 7 OR GRADE 12

The odds of having Grade 7 are 0.23 times less likely among people residing in households with no flush toilets as compared to people residing in households with a flush toilet. The odds are 0.26 times less likely among people residing in households not using electricity for

cooking as compared to those using the service for cooking. However, there is insufficient data to indicate if service delivery factors have any effect on attaining Grade 12. Provision of services like electricity and flush toilets is associated with government's general development of communities as well as improved hygiene and health, resulting in reduced absenteeism, which has a negative effect on the performance of learners (Bayat et al. 2014; Mier et al. 2003). Provision of services is further associated with the development of infrastructure like schools and libraries, which ultimately improves educational performance in the areas (Consedine & Zapalla 2001; Desai 1991).

Table 5.1 Socio-economic, socio-economic and service-delivery factors contributing to attaining Grade 7 and Grade 12 levels in Limpopo

Characteristics	Grade 7	Grade 12
	Socio-demographic, socio-economic and service delivery factors	Socio-demographic, socio-economic and service delivery factors
Gender <i>Ref:</i> Male Female	1.00 2.88(1.22–6.81)**	1.00 2.50(1.21–5.16)**
Age of person <i>Ref:</i> 14 (for Grade 7) & 15–34 (for Grade 12) 15–34 35–64 65+	1.00 31.63(6.53–153.12)*** 10.75(2.89–39.97)*** 1	1.00 0.56(0.31–1.02)* 0.09(0.01–0.71)**
Population group <i>Ref:</i> Black/ African Coloured Indian/Asian White	1.00 1 0.47(0.05–4.96) 1	1.00 1.65(0.08–33.71) 3.25(0.47–22.65) 0.49(0.16–1.52)

Continued overleaf

Table 5.1 Continued

Characteristics	Grade 7	Grade 12
	Socio-demographic, socio-economic and service delivery factors	Socio-demographic, socio-economic and service delivery factors
Marital status of household head		
<i>Ref: Married</i>	1.00	1.00
Living together as partners	0.87(0.40–1.89)	0.69(0.35–1.35)
Divorced	1	1
Widow/widower	1	1
Single	1	1
Household head's spouse in dwelling		
<i>Ref: Yes</i>	1.00	1.00
No	0.65(0.30–1.39)	0.62(0.31–1.24)
Parent alive		
<i>Ref: Both alive</i>	1.00	1.00
Both dead	0.61(0.28–1.37)	0.63(0.33–1.21)
One parent alive	1.07(0.48–2.36)	0.97(0.53–1.75)
Household size		
<i>Ref: 1–3</i>	1.00	1.00
4–6	0.71(0.33–1.52)	1.22(0.69–2.16)
7+	0.37(0.14–1.00)*	0.34(0.12–0.96)**
Geo type		
<i>Ref: Urban formal</i>	1.00	1.00
Urban informal	0.14(0.02–0.84)**	0.41(0.11–1.49)
Tribal areas	1.54(0.32–7.42)	1.27(0.48–3.40)
Rural formal	0.20(0.03–1.13)*	0.14(0.03–0.70)**
Employment status of household head		
<i>Ref: Employed</i>	1.00	1.00
Not employed	0.61(0.27–1.34)	0.52(0.24–1.12)*

Continued overleaf

Table 5.1 Continued

Characteristics	Grade 7	Grade 12
	Socio-demographic, socio-economic and service delivery factors	Socio-demographic, socio-economic and service delivery factors
Employment sector of head of household		
<i>Ref:</i> Formal	1.00	1.00
Informal	0.98(0.48–2.04)	0.68(0.35–1.31)
Household total income		
<i>Ref:</i> Low	1.00	1.00
Medium	1.24(0.61–2.50)	1.90(1.11–3.27)**
High	2.25(0.11–47.80)	1
Household source of income		
<i>Ref:</i> Salary	1.00	1.00
Business	1.02(0.32–3.27)	1.29(0.47–3.50)
Remittance	0.75(0.17–3.27)	0.62(0.18–2.16)
Pension	3.96(0.35–42.46)	5.93(0.90–39.03)*
Social grant	1.62(0.70–3.72)	0.71(0.38–1.31)
Agricultural products	0.96(0.24–3.85)	1.22(0.33–4.42)
Other	0.89(0.02–31.51)	1
No income	1	1
Vehicle in household		
<i>Ref:</i> Yes	1.00	1.00
No	0.71(0.35–1.43)	0.34(0.20–0.59)***
Fridge in household		
<i>Ref:</i> Yes	1.00	1.00
No	0.66(0.36–1.23)	0.43(0.23–0.81)**
Household access to internet		
<i>Ref:</i> Yes	1.00	1.00
No	0.43(0.03–5.92)	0.08(0.02–0.39)***

Continued overleaf

Table 3.1 Continued

Characteristics	Grade 7	Grade 12
	Socio-demographic, socio-economic and service delivery factors	Socio-demographic, socio-economic and service delivery factors
Main type of dwelling		
<i>Ref:</i> Brick house on stand	1.00	1.00
Traditional dwelling	0.28(0.02–3.82)	1.97(0.12–31.87)
Flats/apartment/ complexes/townhouses	1	0.32(0.07–1.43)
Back yard structures	0.63(0.14–2.74)	0.64(0.20–2.06)
Informal dwelling	4.14(0.42–41.22)	11.43(1.66–78.76)
Room/Granny flat	0.38(0.11–1.35)	0.53(0.17–1.64)
Quality of dwelling		
<i>Ref:</i> Good	1.00	1.00
Average	0.81(0.10–6.72)	0.25(0.05–1.36)
Poor	–	–
Flush toilet in dwelling		
<i>Ref:</i> Yes	1.00	1.00
No	0.23(0.06–0.89)**	0.44(0.18–1.09)
Household source of drinking water		
<i>Ref:</i> Piped water/ borehole in yard	1.00	1.00
Rivers/dams/rain	1.30(0.48–3.56)	0.70(0.30–1.62)
Neighbour's/communal tap	1.15(0.61–2.17)	1.07(0.57–1.99)
Household uses electricity for lighting		
<i>Ref:</i> Yes	1.00	1.00
No	1.95(0.64–5.96)	2.36(0.66–8.47)
Household uses electricity for cooking		
<i>Ref:</i> Yes	1.00	1.00
No	0.26(0.13–0.51)***	0.56(0.30–1.03)*
	LR Chi2 = 36.75 R2 = 0.24	LR chi2 = 253.31 R2 = 0.34

Notes: * = p-value > 90%; ** = p-value > 95%; *** = p-value > 99%

SECTION 6 CONCLUSION AND POLICY IMPLICATIONS

Previous studies indicate that the education performance of boys and girls vary in different countries/regions depending on how the communities treat boys and girls, while broken families and larger households have lower odds of better educational outcomes. Studies also show that poor socio-economic conditions (e.g. unemployment of parents, low household income, household poverty, etc.) and lack of basic services in communities are linked to negative educational outcomes. Basic services refer to having no flush toilet, no electricity and no piped water in the household.

The current study aimed to investigate socio-demographic, socio-economic and service-delivery factors influencing education performance among citizens of Limpopo. The study shows that males, younger people, people residing in households with better socio-economic conditions (employed household heads, having household assets like a refrigerator or a vehicle) and households receiving basic services have higher percentages of both Grade 7 and Grade 12.

The logistic regression results indicate that females and people residing in formal urban areas have higher chances of attaining both Grade 7 and Grade 12 in Limpopo, while residing in a household with access to a flush toilet and using electricity further increase the chances of attaining Grade 7 only. Children and young people, people residing in a household which is smaller, has a 'middle' monthly income (R6 001 – R 30 000), has a vehicle or a refrigerator, and internet access, have increased chances of attaining Grade 12. Thus, to summarise, socio-demographic, socio-economic and service-delivery factors contribute to attaining Grade 7 in Limpopo; socio-economic

factors mainly contribute to attaining Grade 12 in the province, but service-delivery factors have no effect. These findings are consistent with the studies conducted in the past which indicate that girls in countries with good education policies have higher odds of performing better in school as compared to boys, and that higher incomes and better socio-economic conditions of a learner improve their educational performance (Anderson 2000; Consedine & Zapalla 2001; Kanyongo et al. 2006; Yu & Hannum 2007)

These prompt for improvement in policies in the province to bring about meaningful changes in the educational performance of the population in Limpopo. The policy implications of this study are as follows:

1. Programmes aimed at ensuring universal access to education should be intensified to ensure that children of school-going age enrol and remain in school, irrespective of gender. The Children's Act on rights to basic education should be implemented in full in order to ensure that the right to education for children is not infringed.
2. Adult Basic Education and Training (ABET) programmes should be intensified, particularly targeting working-age adults. ABET centres should be established at reasonable travelling distances from communities.
3. There is a need for a general improvement in socio-economic conditions of households so as to empower them to provide financial support required for their children's schooling. More focus should be placed on infrastructure development (like sanitation, electricity, and well-resourced schools) in poorer communities (mostly rural) of the province. This will bring about much needed economic activity to these communities.
4. Government economic programmes such as the rural development programmes aimed at making rural areas economically active and sustainable should be reengineered to ensure that local people are

prioritised and employed in projects so as to improve their households' income (as compared to the meagre R56 844 annual household income reported for 2011) (Limpopo Provincial Government 2011). The largest part of Limpopo is rural, poor and less serviced (Gardiner 2008).

Minimising the negative socio-demographic, socio-economic and service-delivery challenges (at individual, household and community levels) faced by the poorer communities will ultimately ensure that younger generations remain in school.

The limitations of the study included the lack of data on the education level of parents and school facilities. As such further research is required to establish the effects of these factors. Furthermore, the effects of socio-demographic, socio-economic, service-delivery and other factors on attaining tertiary education in Limpopo need to be studied.

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