School completion, the matric and post-school transitions in South Africa

A compilation of research for the COVID-Generation Project

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Summary

1 INTRODUCTION

Youth born just after the turn of democracy in 1994 have the highest years of completed education of any cohort in South African history and this may rise further among younger age cohorts. This is a trend worth celebrating. Individuals' prospects for social mobility are typically higher for each additional level of completed education (Branson & Lam 2021; Köhler 2024; Van der Berg 2014). Higher average schooling levels, if resulting in a more educated populace, are also linked to accelerated economic growth (Barro 2013; Hanushek & Wößmann 2010). Unfortunately, South Africa's educational progress is occurring alongside various constraints: slow economic growth (National Treasury 2024, p2); high and rising unemployment especially among youth (Köhler 2023; Mudiriza et al. 2023); public finance constraints in expanding post-school education and training (PSET) opportunities (Kruger 2024); and growing concerns about mismatches between youth's skills and the skills demanded in a changing world of work (World Bank 2019).

The COVID-19 pandemic also resulted in unprecedented disruptions to schooling, and large losses in learning (Van der Berg & Böhmer 2025; Wills & van der Berg 2024; Ardington et al. 2021). However, an unexpected pattern emerged over the pandemic period: South African youth's average years of completed education continued to rise. For instance, the average 28-year-old in 2023/24 had more years of completed education than the average 28-year-old in 2018/19.

These patterns and circumstances present us with various questions. Does rising educational attainment signal a South African youth population with better and more appropriate skills? Why would we continue to see rising levels of average education in South Africa during and in the years just following the COVID-19 pandemic? And thinking more generally about the implications of rising educational attainment for youth and the nation, are the post-school transitions of these more educated youth cohorts likely to be any better than those of similarly educated youth born a decade or two previously?

With these questions in mind, this compilation of four research chapters aims to provide an increased understanding of school completion trends in South Africa and relatedly matric performance. This compilation also investigates youth transitions beyond school with a particular focus on recent matriculants. Understanding how COVID-19 pandemic disruptions to schooling and the labour market have affected these trends features strongly, against a larger COVID-Generation Project for which this research compilation has been produced.

2 CHAPTER SUMMARIES

Chapter 2: Trends in school completion and matric results in South Africa before, during, and after COVID-19

By Rebecca Selkirk & Gabrielle Wills

With a lens on the pandemic period, chapter 2 examines school completion using household survey data from 2010 to 2024 and National Senior Certificate (NSC) examinations data from 2008 to 2023. Two main questions are considered in this chapter:

- By how much has school completion increased since the introduction of the NSC in 2008[1], and how did the pandemic affect school completion?
- Can the large increases in school completion, and relatively buoyant results in the NSC during and after the pandemic, be explained?

Since the introduction of the NSC, school completion rates have been rising with notable increases during and post-pandemic. The percentage of youth with completed secondary education rose from about 48% in 2010 to 55% in 2018, increased further to 60% in 2022 before reaching almost 64% at the start of 2024 as suggested by the Quarterly Labour Force Survey. These increases in school completion in recent years have brought South Africa's school completion rates to a level that is high and comparable to other middle-income countries (Department of Basic Education (DBE) 2024b).

This chapter outlines the reasons for rising school completion rates from 2019 to 2023. This was attributable to unprecedented increases in NSC candidate numbers without an equivalent accompanying decline in NSC pass rates. For instance, over 725,000 full-time candidates wrote the NSC examinations in 2022 - 30% more than the annual average number writing across 2013-2019 and the highest number of writers on record. NSC candidate numbers were already higher than usual in 2020, but substantial NSC candidate number increases occurred between 2020 and 2022, mostly driven by three factors: demographic pressures, increased learner flows, and the removal of the Multiple Examination Opportunity (MEO).

Despite the disruptions caused by the pandemic, which were expected to negatively impact academic performance, more NSC passes were achieved over the four-year period 2020-2023 than in the preceding five years (2015-2019) and more bachelor passes were achieved than in the previous six years (2014-2019). Surprisingly, some of the largest increases in candidate numbers and performance were recorded in historically poor-performing provinces.

Rising NSC candidate numbers during and post the pandemic can be explained. What is less clear is why NSC pass rates and bachelor pass rates were relatively buoyant and reached record highs by 2023. The composition of the matric cohort during COVID-19

[1] The National Senior Certificate (NSC) replaced the former matriculation examination, referred to as the Senior Certificate (SC), in 2008.

years (2020 and 2021) was observably different from previous years, with many of the differences typically associated with lower performance. Examples of such differences include higher proportions of male candidates, overage candidates, and candidates from poorer (Quintile 1 to 3) schools. However, proportionally fewer candidates chose to write more challenging subjects like Mathematics and Physical Science, which may have mitigated some of the negative compositional effects, while improved age profiles in 2022 and 2023 may have also supported improved results.

An encouraging finding in this chapter is that inequalities in NSC pass rates and bachelor pass rates had been declining significantly over the 2008-2019 period before the early pandemic years (2020 and 2021) reversed some of this progress. In contrast with widening inequalities in learning in earlier grades over the pandemic period (Böhmer & Wills 2023), school socio-economic achievement gaps in NSC outcomes fully recovered to pre-pandemic levels, and even shrunk further post-2021. By 2023, the achievement gap in NSC pass and bachelor pass rates between less resourced Quintile 1 to 3 schools and wealthier Quintile 5 schools had narrowed to the smallest gap on record. The most striking example of such reductions in inequality is the near five-fold decline in the NSC pass rate gap between Quintile 1 and Quintile 5 schools from a gap of 48 percentage points in 2008 to a gap of just 10 percentage points in 2021.

A notable trend over time has been the significant decline in the proportion of students choosing Mathematics and Physical Science. The percentage of full-time NSC candidates writing Mathematics dropped from 53% in 2008 to 38.5% in 2023, while the percentage of candidates writing Physical Science dropped from 38.6% to 29.7% over the same period. But against the backdrop of much higher number of candidates writing the NSC examination, the number of candidates achieving 60% or more in Mathematics was still higher in the period 2020-2023 than in previous years, while for Physical Science the number of high achievers in 2020-2021 remained below 2019's level before increasing substantially. As a result, the Medium-Term Strategic Framework (MTSF) (Department of Planning, Monitoring and Evaluation 2021:83) goal of 35,000 candidates achieving at least 60% in each of Mathematics and Physical Science by 2024 was already reached in 2023.

Approximately half of the country's high-level Mathematics passes in 2023 came from Quintile 1 to 3 schools, representing massive equity gains compared to the 27% of high-level passes produced by such schools in 2008. As with many aspects of improved NSC achievement over the 2019-2023 period, there are no observed compositional changes in factors such age, gender, subject choice and school quintile among NSC matric cohorts that clearly explain the improvements in high-level passes in Mathematics and Physical Science. However, we are unable to directly control for changes in the underlying academic competence of NSC cohorts in the analysis. It is possible that educational progress pre-pandemic, as reflected in South Africa's improved performance in international tests of mathematics and literacy, may account for some of these gains (Gustafsson 2023; McKinsey & Company 2024; DBE 2024c).

Given the importance of the NSC examination for the post-school education and training (PSET) system and the labour market, as well as for research into South Africa's final years of schooling, it is crucial that the reasons for rising NSC performance during and post-pandemic be explored further. A better understanding of the reasons for higher-than-expected NSC achievement in recent years could yield valuable policy insights or highlight any potential underlying limitations of existing standardisation processes.

Chapter 3: The consistency of the matric and its signalling ability - A review of the evidence

By Gabrielle Wills

South Africa's National Senior Certificate (NSC), or 'matric', is the country's main secondary school-leaving examination, serving as a critical gateway to higher education and employment. NSC results are pivotal for university admissions and are often required by employers as proof of educational attainment, making the consistency and credibility of this qualification highly important. Beyond academia, the NSC is a key measure of the nation's human capital, particularly in subjects like Mathematics and Physical Science. Moreover, holding a matric certificate has historically been a key determinant in the labour market, increasing the likelihood of employment and potential earnings compared to having an incomplete secondary education (Salisbury 2016; Köhler 2024; Yu & Adams 2022). Against this context, this chapter explores three main aspects of the NSC: the comparability of results over time and the systems in place to support quality assurance; the potential for grade inflation during the COVID-19 pandemic; and the signalling power of the NSC in relation to academic and labour market success.

Standardising the NSC from year to year

Umalusi is the body responsible for quality assurance of qualifications, and they oversee a comprehensive range of processes designed to maintain the integrity of the NSC results overall and at the subject-specific level. These include, amongst other things, moderating the question papers, reviewing school-based assessments (SBAs), auditing the examination process to prevent cheating, and monitoring the marking process. Despite Umalusi's extensive efforts, it is ambitious to expect exact comparability in subject-specific results from year to year in the absence of psychometric standardisation of results based on common items (or questions) across years. NSC standardisation issues can occur, as evident in the transition from the Senior Certificate (SC) system to the National Senior Certificate (NSC) in 2008 (Hunt et al. 2011; Nel & Kristner 2009; Rankin et al. 2012).

The pandemic presented unprecedented challenges that may have complicated the standardisation of NSC results post-2019. While some might interpret relatively limited declines in NSC results during and after the pandemic as evidence of either easier examinations or more lenient marking, assessing changes in NSC performance from year to year is far from straightforward (Selkirk forthcoming). Several factors influencing national NSC results vary over time, such as subject choices, changes in student ability distributions, and the availability of policies like the 'Multiple Examinations Opportunity'.

For this reason, it is impossible to make conclusions on NSC standards from trends in the NSC data alone, and even subject-specific analysis is complex.

Was there grade inflation in NSC results during the pandemic?

The chapter also examines the extent of grade inflation during the pandemic drawing on three studies (Department of Basic Education 2024a; Whitelaw & Branson 2024; Selkirk, forthcoming).

Particularly noteworthy are the findings from Whitelaw & Branson (2024), which suggests the presence of slight grade inflation in the 2021 and 2022 NSC results. Their study compares the NSC results of applicants to the University of Cape Town (UCT) against their performance on benchmarked standardised tests (known as the National Benchmark Tests (NBTs)) at three periods: before (2018/19), during (2021) and just after the pandemic (2022). Not only at the average level, but across the entire distribution of NBT scores in Academic Literacy and Quantitative Literacy, the university applicants in 2021 and 2022 slightly outperformed those in 2018 and 2019 in the NSC. Across the NBT score distribution, NSC results (measured as average Admission Point Scores (APS)) of the 2021 and 2022 applicants were approximately 1-2 percentage points higher than their 2018 and 2019 counterparts (Whitelaw & Branson 2024, p7). This suggests the possibility of grade inflation in the NSC results during the 2021 and 2022 years, with the biggest discrepancy in 2021. Moreover, they observe that within a given quartile of NBT scores applicants from no-fee schools in 2021 and 2022 exhibited larger average APS gains on 2018/19 applicants, compared to the gains made by applicants from fee-charging schools over the same period.

In an analysis of NSC results in the Western Cape, Selkirk (forthcoming) models what NSC pass rates might have been achieved in the province in 2020 and 2021 in the absence of pandemic-related disruptions. Her model accounts for changes in various school and learner factors, including Grade 11 repetition rates, schools' average learner characteristics, subject combinations, schools' prior average test scores and unobserved school characteristics. While her results do not suggest inflation in the 2020 NSC pass rates, she does find that 2021 NSC pass rates were higher than predicted, particularly in Quintile 1-4 schools (Selkirk, forthcoming), concurring with Whitelaw & Branson's (2024) findings.

With regard to NSC Mathematics results during the pandemic, two conflicting studies on grade inflation exist. One study indicates that it has become increasingly *difficult* to achieve high-level marks (50% or more) since the introduction of the NSC in 2008 and even into pandemic years (Department of Basic Education 2024a, p.18; Gustafsson 2016). This conclusion is premised on a statistical method that produces an adjusted Mathematics result mark based on a sample of "stable" schools, and assumes that the underlying ability of students in these schools remained consistent over time. However, this assumption may not have held during and after the pandemic when Grade 12

enrolments were significantly elevated through more lenient pandemic-related promotion in 2020 and 2021.

In contrast, Whitelaw & Branson (2024), demonstrating that the underlying mathematics abilities of their university applicant sample appeared consistent just before, during and just after the pandemic[2], show that a university applicants' NSC Mathematics results in 2021 (and to a lesser extent, 2022) were higher than those of applicants to the same university in 2018/19 across the distribution of scores. This implies some grade inflation in NSC Mathematics results in 2021, with a reduction in this issue in 2022, but does not rule out the possibility that the NSC Mathematics examination had become more difficult over time in years preceding the pandemic (Gustafsson 2023).

Signalling ability of the matric

Despite some inconsistencies in standardisation that can occur, the NSC remains a strong predictor of academic preparedness for university, though other unobserved factors may influence university outcomes even more (Hunt et al. 2011; Pleace & Nicholls 2021; Rankin et al., 2012). Numerous studies also recommend that for university placements and admissions, the NSC should be used alongside alternate assessments such as the National Benchmark Tests (NBTs) (Allers et al. 2016; Mabizela & George 2020; Nel & Kristner 2009; Rankin et al. 2012).

In the labour market, the returns to a matric qualification have declined in recent years (2019 to 2023). Although a matric in 2023 still provided a significant advantage over an incomplete secondary education or primary school education for both Africans and White individuals aged 15-65 (Köhler 2024). At the same time, the returns to post-school qualifications have been rising relative to a matric. Youth should therefore be encouraged to further their education beyond matric, and the NSC needs to remain an important signal of their preparedness for such studies.

Concluding remarks

The matric clearly matters. Acknowledging the immense efforts from Umalusi in quality assuring the NSC, healthy debate around maintaining standards in the matric is necessary and would benefit from ongoing and in-depth analysis of NSC results. Providing analysts access to unadjusted raw marks and separating out exam and school-based assessment components would support this process. There is also much value from having alternate standardised assessments like the National Benchmark Tests (NBTs) to evaluate the skills of school-leavers. Not only do NBTs serve as a complement to the NSC in guiding university admissions, but they are a very useful tool to monitor standards in the NSC. More comparisons between NSC and NBT results could improve our understanding of trends in NSC performance and subject difficulty.

[2] As measured by results on the NBT Mathematics test.

Chapter 4: Transitioning beyond matric in South Africa

By Gabrielle Wills

Against the backdrop of rising school completion, chapter 4 aims to answer a simple question: What are recent matriculants doing? Additionally, the chapter expands on this topic with the following sub-questions:

- How have recent matriculants' activities changed in the past decade?
- To what extent are recent matriculants finding jobs or transitioning into post-school education and training (PSET) opportunities?

Rising NEET rates among recent matriculants

Drawing largely on the Quarterly Labour Force Survey, the chapter highlights how an increasing proportion of recent matriculants (defined as youth aged 15-24 with a matric or other qualification signalling 12 years of completed schooling) are classified as "Not in Employment, Education, or Training" (NEET). NEET rates among recent matriculants have risen notably from pre-COVID-19 levels of around 44-45% (over the period 2014 to 2019 using quarter 1 data) to 47.5% in the first quarter of 2021, peaking at 55% in early 2022, and remaining high at 49.8% at the start of 2024. These trends mirror broader increases in NEET rates among youth aged 15-24, which have risen from 32.2% in the first quarter of 2014 to 35.4% in first quarter of 2024.

There are also large regional variations in NEET rates among recent matriculants. In 2023/24 about a third of recent matriculants in the Western Cape and 41% in Gauteng were NEET, compared to 61% of their peers in Mpumulanga and two-thirds (68%) of their peers in the North West Province.

Alongside the rise in NEET rates among recent matriculants, those recent matriculants who are NEET are now more likely to find themselves among the long-term unemployed. In 2014, 27.2% of NEET youth aged 15-24 with a matric had been searching for work for over a year. By the first quarter of 2020, this had increased to nearly 33%, further rising to 34.6% at the start of 2022, and remained statistically significantly elevated at 32% in quarter 1 of 2024 when compared to 2014.

The long-term negative consequences for youth of being persistently NEET are evident in existing studies and include higher levels of mental health problems, substance abuse and greater reliance on social grants (Branson et al. 2019; Gariépy et al. 2022). This is a concern in a context of rising NEET rates among youth aged 15-24, with matriculants comprising an increasingly larger share of this group. Nearly a half (49.0%) of youth NEETs in the first quarter of 2024 had a matric compared just 37.1% ten years previously.

Reasons behind deteriorating NEET rates among recent matriculants

The growing youth NEET issue is linked to deteriorating labour market conditions, evident from around the time of the Global Financial Crisis (Köhler 2024) but worsened by the COVID-19 pandemic. In quarter 1 of 2014, of all youth aged 15-24 with a matric (including

the economically inactive and discouraged work seekers) 19% were in employment. By quarter 1 of 2019, this figure had dropped to 17% and during the strict lockdown period in quarter 2 of 2020 it plummeted to just 11.7%. By early 2024 this estimate had only slightly recovered, reaching 15.6% - still well below pre-pandemic levels and statistically significantly lower than the 2014 estimate. When focusing on the economically active (but including discouraged work seekers), similar patterns emerge. While 4 of every 10 economically active recent matriculants between 2014 and 2018 were employed, by the start of 2024 about 3 of every 10 economically active recent matriculants were employed.

The chapter also demonstrates that the employment probability age profile of South Africans with a matric in 2023/24 (excluding the economically inactive) resembled that of South African's with less than a matric ten years previously, indicative of declining employment prospects. Despite these challenges, having a matric still provides a protective effect against being NEET. While nearly 5 out of 10 matriculants aged 15-24 were NEET in 2024, almost 8 out of 10 of their peers who dropped out of school were NEET.

Limited expansion in post-school education and training (PSET) opportunities in the past decade (2014-2024) positioned against a deteriorating youth labour market has meant the NEET problem in South Africa has worsened. PSET participation rates among youth aged 15-24 in the Quarterly Labour Force Survey did not notably rise between 2014 and 2024 (increasing from 10.4% in quarter 1 of 2014 to 13.1% in quarter 1 of 2024)[3] and remained stagnant between 2018 and 2024. Relatively consistent PSET absorption rates[4] are also observed between 2015 and 2022 as discussed in chapter 5. Unfortunately, continued budget constraints facing the PSET sector will limit improvements in the absorption of higher numbers of matriculants into the PSET sector.

Concluding remarks

This chapter highlights the urgent need to address the NEET crisis through a multi-faceted approach: expanding access to quality PSET opportunities, improving the alignment between the supply of skills from the education system and labour market demands, and creating effective pathways to employment. However, these efforts must be underpinned by economic growth, as without it, overcoming financial constraints in the PSET sector and generating sufficient demand for youth employment will remain a challenge. Addressing these issues is critical to improving the long-term prospects of South Africa's youth and realising the benefits of rising educational attainment for national development.

[3] Increases from quarter 4 of 2014 (9.3%) to quarter 4 of 2023 (10.5%) were statistically insignificant at the 5% level. The chapter defines PSET enrolment in the QLFS as including enrolment in Technical Vocational Education and Training (TVET), 'other colleges' or Higher Education and Training.

[4] Absorption (or gross enrolment) rates are calculated as headcount enrolments in PSET relative to the population aged 18 to 22.

Chapter 5: Post-school education and training and youth unemployment - Exploring prospects

By John Kruger

Amidst deteriorating labour market conditions for youth since the 2008 Global Financial Crisis (Köhler 2024), chapter 5 examines the potential for South Africa's post-school education and training (PSET) sector to play a more significant role in reducing high youth unemployment by expanding and improving its institutions.

Sector plans aimed for significant PSET growth, aiming to raise PSET enrolments from 1.7 million in 2010 to 5.1 million by 2030, equating to 85.9% of 18-22-year-olds. Despite strong enrolment growth over the first two decades of democracy, a notable increase in the inclusion of women and African students, and an expansion of vocational opportunities, enrolment growth in the PSET sector appears to have faltered since 2015 as observed from trends in enrolment statistics from the Department of Higher Education and Training. While the absorption rate increased from 33% in 2010 to 43% by 2015, it dropped backed to 41% by 2022 and is still significantly behind planned targets.

Public university enrolments grew from 2015-2022, but below targeted rates, while private universities exceeded targets with their 8.5% average annual growth. However, public TVET and Community Education and Training (CET) enrolments stagnated after 2015 and possibly declined further during the COVID-19 pandemic, also undermining the aim to rebalance the PSET sector towards vocational education. However, more research is needed to clarify PSET enrolment numbers from administrative data against those reflected in household survey data. The two sets of data do not always align well. Efforts are needed to ensure DHET enrolment statistics are comparable from year to year.

After being broadly in line with comparator countries in the 1990s, South Africa's prioritisation of tertiary education (the more advanced part of PSET) now significantly lags other upper-middle-income countries. In 2021, South Africa's tertiary gross enrolment rate was just 25.4% compared to 31.6% in India, 41.0% in Indonesia, 56.8% in Brazil and about 67.4% in China.

There are substantial challenges to resuming planned expansion. These include fiscal constraints - exacerbated by slow economic growth and debt burdens - which have reduced real spending on PSET since 2022. Prior to this, between 2015/16 and 2022/23, real spending on PSET grew by about 62%, and PSET spending increased rapidly from 22% to 30% of total education spending. However, the additions to spending went significantly to funding student living and study costs and did not enable significant growth in enrolment and quality in the sector. In addition, the current funding model for students is expensive and inadequate and is likely to create incentives which may exacerbate efficiencies and low completion rates. Systemic issues - such as low-quality schooling and a sub-optimally configured set of institutions - further limit expansion.

The chapter emphasises the urgency of addressing these barriers to realise PSET's potential in supporting economic development, reducing inequality, and reducing youth

unemployment. Strategic interventions are needed across the areas of student readiness, student financing and the configuration of the sector and its institutions. Achieving consensus on PSET's important role in South Africa's economic development may be a critical first step in the process.

3 REFERENCES

Ardington, C., Wills, G. & Kotze, J. 2021. COVID-19 learning losses: Early grade reading in South Africa. *International Journal of Educational Development*, 86(2021), p102480.

Allers, N.J., Hay, L. & Janse van Rensburg, R.C. 2016. Preliminary study: Predictors for success in an important premedical subject at a South African medical school. African Journal of Health Professions Education, 8(1), 81-83. https://doi.org/10.7196/ajhpe.2016.v8i1.647

Barro, R.J. .2013. Education and Economic Growth. *Annals of Economics and Finance* 14-2(A), p277–304.

Böhmer, B. & Wills, G. 2023. COVID-19 and inequality in reading outcomes in South Africa: PIRLS 2016 and 2021. COVID-Generation RESEP working paper. Stellenbosch: Stellenbosch University.

Branson, N., De Lannoy, A. & Kahn, A., 2019. Exploring the transitions and well-being of young people who leave school before completing secondary education in South Africa. Saldru Working Paper 244 / NIDS Discussion Paper 2019/11. University of Cape Town.

Branson, N. and Lam, D. 2021. 'The Economics of Education in South Africa,' in A. Oqubay, F. Tregenna, and I. Valodia (eds), *The Oxford Handbook of the South African Economy*. Oxford Academic.

Department of Basic Education (DBE) 2024a. 2023 NSC Exam Results Technical Report. Pretoria: Department of Basic Education.

Department of Basic Education (DBE) 2024b. Review of progress in the basic education sector to 2024. Analysis of key statistics. Pretoria: Department of Basic Education.

Department of Basic Education (DBE) 2024c. South African 2023 Trends in International Mathematics and Science Study (TIMSS) Highlights Report. Pretoria: Department of Basic Education.

Department of Planning, Monitoring and Evaluation. 2021. Revised medium term strategic framework: 2019-2024. Pretoria: Department of Planning, Monitoring and Evaluation.

Gariépy, G., Danna, S.M., Hawke, L., Henderson, J. & Iyer, S. 2022. The mental health of young people who are not in education, employment, or training: a systematic review and meta-analysis. *Soc Psychiatry Psychiatr Epidemiol* 57, p1107–1121. https://doi.org/10.1007/s00127-021-02212-8

Gustafsson, M. 2016. Understanding trends in high-level achievement in Grade 12 mathematics and physical science. Pretoria, Department of Basic Education.

Gustafsson, M. 2023. Trends and targets with respect to NSC results permitting entry into mathematically-oriented programmes at a university. Report produced for the Department of Basic Education. Unpublished.

Hanushek, E.A. & Wößmann, L. (2010), Education and Economic Growth. In: Penelope Peterson, Eva Baker, Barry McGaw, (Editors), *International Encyclopedia of Education*. volume 2, pp. 245-252. Oxford: Elsevier

Hunt, K., Ntuli. M., Rankin, N., Schoer, V. & Sebastiao, C. 2011. Comparability of NSC mathematics scores and former SC mathematics scores: How consistent is the signal across time? *Education as Change*, 15(1), p3–16.

Köhler, T. 2023. What we know about COVID-19 and the South African labour market. Research Note for the COVID-Generation project. Stellenbosch: Research on Socio-Economic Policy (RESEP), Stellenbosch University.

Köhler, T. 2024. A Paradox of Progress: Rising Education and Unequal Labour Market Returns in Post-Apartheid South Africa. COVID-Generation Working Paper. Stellenbosch: Research on Socio-Economic Policy, Stellenbosch University.

Kruger, J. 2024. Spending and Budget Trends in the South African Post-School Education and Training Sector. Note 15, Teacher Demographic Dividend project (August 2024). Stellenbosch: Research on Socio-Economic Policy, Stellenbosch University.

Mabizela, S.E. & George, A.Z. 2020. Predictive validity of the National Benchmark Test and National Senior Certificate for the academic success of first-year medical students at one South African university. BMC Medical Education 20 (article 152). https://doi.org/10.1186/s12909-020-02059-8

McKinsey & Company. 2024. Spark & sustain: How all the world's school systems can improve learning at scale. New York

Mudiriza, G., Grotte, J., De Lannoy, A., David, A., & Leibbrandt, M. 2023. Developing a Youth Labour Market Index for South Africa at the sub-national level., SALDRU Working Paper Number 297. Cape Town: SALDRU, UCT

National Treasury, Republic of South Africa. 2024. Medium Term Budget Policy Statement (MTBPS) 2024. Pretoria: National Treasury.

Nel, C. & Kristner, L. 2009. The National Senior Certificate: Implications for access to higher education. South African Journal of Higher Education, 23(5), p953-973.

Pleace, M. & Nicholls, N. 2021. Grit, motivation and university grades. *South African Journal of Economics*, 90(1), p21-36.

Rankin N, Schoer V, Sebastiao C, van Walbeek C. 2012. Predictors of academic performance: National Senior Certificate versus National Benchmark Test. South African Journal of Higher Education. 26, p564–85.

Salisbury, T. 2016. Education and inequality in South Africa: Returns to schooling in the post-apartheid era. *International Journal of Educational Development,* 46, p43-52

Selkirk, R. forthcoming. Grade repetition in South Africa: impacts on achievements, flows, and school completion. Unpublished Thesis. Stellenbosch: Stellenbosch University.

Van der Berg, S. 2014. Inequality, poverty and prospects for redistribution. *Development Southern Africa*, 31(2), p197-218.

Van der Berg, S. & Böhmer, B. 2025. South Africa: COVID-19 Learning Losses and Attempts at Recovery in a Poorly Performing and Unequal Education System. In: N. Crato, & A. Patrinos (eds) Improving National Education Systems After COVID-19 (pp.153-169)

Wills, G., & Van der Berg, S. (2024). COVID-19 disruptions and education in South Africa: Two years of evidence. *Development Southern Africa,* 41(2), p446–465. https://doi.org/10.1080/0376835X.2024.2311711

Whitelaw, E. & Branson, N. 2024. Assessment matters: What can we understand about National Senior Certificate results during COVID-19 from university entrance exams? COVID-Generation RESEP note. Stellenbosch: Stellenbosch University.

World Bank. 2019. World Development Report 2019: The Changing Nature of Work. Washington, DC: World Bank. doi:10.1596/978-1-4648-1328-3.

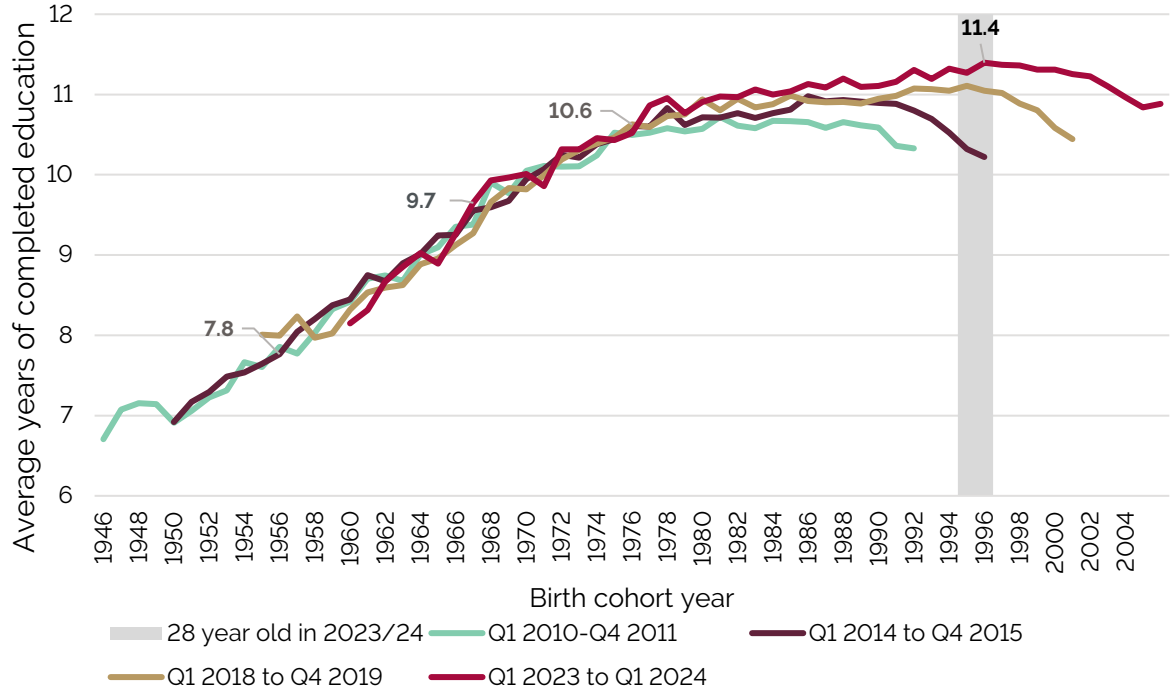
Yu, D. & Adams, C. 2022. Labour market trends in South Africa in 2009-2019: A lost decade? Stellenbosch Economic Working Papers: WP03/2022. Stellenbosch: Stellenbosch University.

1 Introduction

1 RATIONALE

Consistent with a trend of increasing educational attainment in the developing world (World Bank Group 2018, p59), average years of completed education have been rising in South Africa (Branson et al. 2020). At least since the middle of the of the 20th century, each successive birth cohort in South Africa attained higher average levels of completed education. For instance, individuals born around the mid-50s have almost 8 years of completed education. Those born twenty years later in the mid-70s have about 10.6 years of completed education. But the 'born-frees', those entering the world just after the turn of democracy in South Africa in 1995 or 1996 and aged 28 or 29 at the time of writing, have the highest average years of completed education of any cohort in South African history at roughly 11.4 years (see Figure 1).

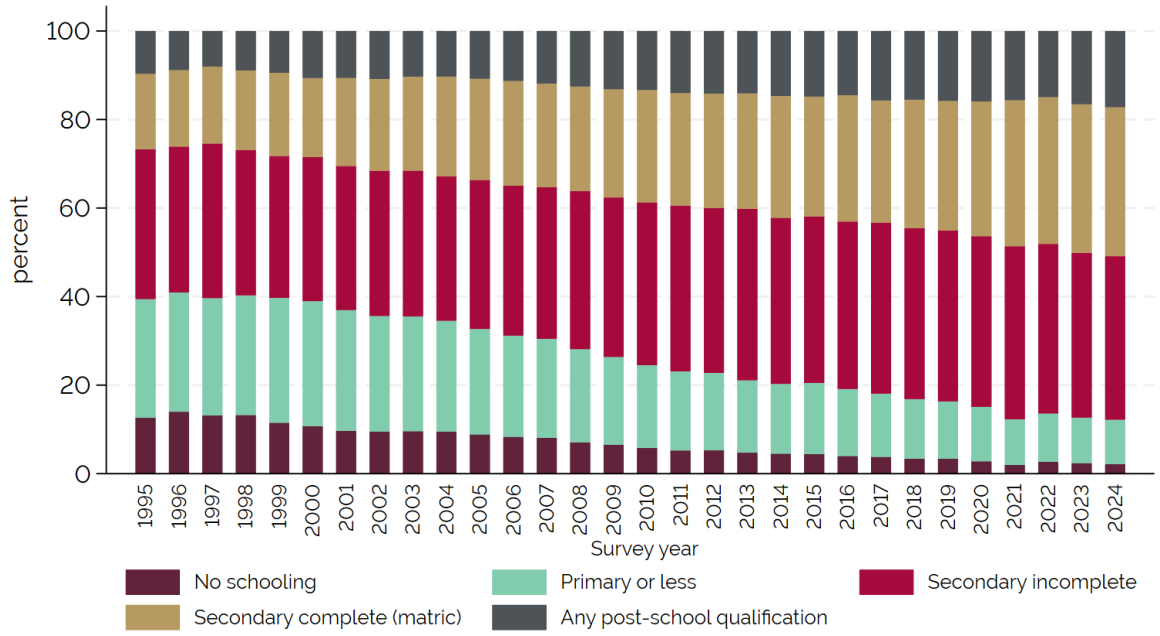
Figure 1: Average years of completed education across birth cohorts, Quarterly Labour Force Survey



Data source: Quarterly Labour Force Surveys, own calculations. Weighted. No confidence intervals shown. Q = quarter.

A major contributing factor to this improvement in educational attainment is that more youth are staying in school for longer and completing their schooling (Department of Basic Education 2024). Over the past 30 years, the share of 25–64-year-olds in the South African population with just a completed secondary education roughly doubled from 17% in 1995 to 34% in 2024. Similarly, the share of 25–64-year-olds with a post-school qualification increased about 1.7 times, but from a much lower starting point of 9.7% in 1995 increasing to 17% by 2024 (see Figure 2).

Figure 2: Highest educational qualification expressed as a share of the population in South Africa aged 25-64, 1995-2024



Source: PALMS series 3.3.1 from 1995-2009, QLFS quarter 1 from 2010-2024. Statistics South Africa weights used.

Pre-pandemic improvements in educational attainment occurred alongside learning improvements in the basic education system as evidenced in South Africa's rising performance in international tests of numeracy, mathematics and literacy (Department of Basic Education 2024; McKinsey & Company 2024). However, following unprecedented disruptions to schooling, and the large losses in learning experienced during the pandemic (Van der Berg & Böhmer 2025; Wills & van der Berg 2024; Ardington et al. 2021) an unexpected pattern emerges: the average years of completed education of South African youth continued to rise (see Figure 1). For instance, the average 28-year-old in 2023/24 has more years of completed education than an average 28-year-old in 2018/19.

These patterns present us with various questions. Does rising educational attainment signal a South African youth population with better and more appropriate skills? Why would we continue to see rising levels of average education in South Africa during and in the years just following the COVID-19 pandemic? And thinking more generally about the

implications of rising educational attainment for youth and the nation, are the post-school transitions of more educated youth cohorts likely to be any better than those of similarly educated youth born a decade or two previously?

With these questions in mind, this compilation of four research chapters aims to provide an increased understanding of school completion trends in South Africa and. relatedly, matric performance. This compilation also investigates youth transitions beyond school with a particular focus on recent matriculants. Understanding how COVID-19 pandemic disruptions to schooling and the labour market have affected these trends features strongly against a larger COVID-Generation Project for which this research compilation has been produced. Before providing an overview of key chapter findings, we outline the research questions underpinning the enquiry in each chapter.

2 RESEARCH QUESTIONS

Selkirk & Wills in chapter 2 examine trends in school completion from 2010 to 2024 using household survey data. They then provide a comprehensive analysis of 2008 to 2023 results data from the National Senior Certificate (NSC). The NSC is South Africa's main school-leaving examination and has commonly been referred to as the 'matric'. Two main questions are considered in this chapter:

- By how much has school completion increased since the introduction of the NSC in 2008[5], and how did the pandemic affect school completion?
- What explains the large increases in school completion, and relatively buoyant results in the NSC during and after the pandemic? Amongst other things, this involves a closer look at ways in which NSC cohorts differed in pandemic years relative to previous years.

While average trends are considered, the chapter also presents a deeper analysis of inequalities in NSC results and high-level passes in important subjects like Mathematics. As such, the chapter addresses two sub-questions:

- How have inequalities in NSC performance changed over time?
- Is rising school completion being accompanied by the production of more high-level passes in Mathematics and Physical Science and to what extent are poorer (Quintile 1-3) schools contributing to this?

Chapter 2 indirectly contributes to debates about the quality of the NSC qualification, particularly during the pandemic. Due to data constraints, it is impossible to draw definitive conclusions about why NSC performance trends display unexpected patterns during the pandemic, but further analysis of this issue proceeds in chapter 3. Wills' review of existing literature in chapter 3 aims to address three related questions:

[5] The National Senior Certificate (NSC) replaced the former matriculation examination, referred to as the Senior Certificate (SC), in 2008.

- What processes exist to ensure consistency in NSC results from year to year and what do we know about the consistency of NSC results overtime?
- During the pandemic to what extent, if any, was there grade inflation in overall NSC results and performance in NSC Mathematics?
- Is the NSC still a useful signal of ability as reflected in its predictive power of academic success at university and in the extent to which it is currently rewarded in the labour market?

Having focused on trends in NSC outcomes, school completion and matric quality issues. chapter 4 proceeds to consider youth transitions beyond matric. Against a rising tide in school completion, with proportionally more youth leaving school with a matric pass, Wills aims to answer a simple question:

- What are recent matriculants doing?

Additionally, chapter 4 expands on this question with the following sub-questions:

- How have recent matriculants' activities changed in the past decade?
- To what extent are recent matriculants finding jobs or transitioning into post-school education and training (PSET) opportunities?

This sobering analysis points at a growing crisis of matriculants finding themselves not in employment, education or training (NEET). Amidst deteriorating labour market conditions for youth since the 2008 Global Financial Crisis (Köhler 2024), chapter 5 asks two solution-oriented questions in relation to the NEET crisis:

- Could the post-school education and training system (PSET) play a more significant and stronger role in directly absorbing young people, including recent matriculants?
- Could the PSET system play a stronger role in accelerating the absorption of young people into the labour market?

3 REFERENCES

Ardington, C., Wills, G. & Kotze, J. 2021. COVID-19 learning losses: Early grade reading in South Africa. *International Journal of Educational Development*, 86(2021), 102480.

Branson, N., Culligan, S. & Ingle, K. 2020. Developing Siyaphambili: A stronger South Africa Nation Website. Moving towards a unified goal to combat inequality and unemployment. SALDRU report 20/01. Cape Town: SALDRU, UCT.

Department of Basic Education (DBE) 2024. Review of progress in the basic education sector to 2024. Analysis of key statistics. Pretoria: Department of Basic Education.

Köhler, T. 2024. A Paradox of Progress: Rising Education and Unequal Labour Market Returns in Post-Apartheid South Africa. COVID-Generation Working Paper. Research on Socio-Economic Policy, Stellenbosch University.

McKinsey & Company. 2024. Spark & sustain: How all the world's school systems can improve learning at scale. New York

Van der Berg, S. & Böhmer, B. 2025. South Africa: COVID-19 Learning Losses and Attempts at Recovery in a Poorly Performing and Unequal Education System. In: N. Crato, & A. Patrinos (eds) *Improving National Education Systems After COVID-19* (pp.153-169)

Wills, G., & Van der Berg, S. (2024). COVID-19 disruptions and education in South Africa: Two years of evidence. *Development Southern Africa*, 41(2), p446–465. https://doi.org/10.1080/0376835X.2024.2311711

World Bank. 2018. World Development Report 2018: Learning to Realize Education's Promise. Washington, DC: World Bank. doi:10.1596/978-1-4648-1096-1. License: Creative Commons Attribution CC BY 3.0 IGO

2 Trends in school completion and the matric before, during, and after COVID-19 in South Africa

Rebecca Selkirk and Gabrielle Wills

ABSTRACT

This chapter examines school completion in South Africa before, during and after the COVID-19 pandemic drawing on household survey data from 2010 to 2024 and National Senior Certificate (NSC) results from 2008 to 2023. There have been particularly significant improvements in school completion since the introduction of the NSC in 2008. According to the Quarterly Labour Force Survey, the percentage of youth completing secondary education rose from about 48% in 2010 to 55% in 2018, then continued to climb to 60% by 2022, reaching nearly 64% by early 2024. Despite the disruptions caused by the pandemic, which were expected to negatively affect academic performance, more NSC passes were recorded in the four years from 2020 to 2023 than in the previous five years combined (2015 to 2019). Furthermore, more bachelor passes were achieved from 2020 to 2023 than in the previous six years combined (2014 to 2019). Underlying these improvements were substantial increases in the number of matric candidates between 2021 and 2023, which can be attributed to three main factors: population growth, higher learner retention, and the removal of the Multiple Examination Opportunity (MEO). There have also been improvements in the number of candidates achieving 60% benchmarks in Mathematics and Physical Science, although proportionally fewer matric candidates have opted to write these key subjects over time. Another positive trend since the introduction of the NSC has been a significant reduction in inequalities in NSC outcomes. While the pandemic worsened learning inequalities in earlier grades (Böhmer & Wills, 2023), the socio-economic achievement gaps in NSC pass and bachelor pass rates narrowed after the pandemic.

1 INTRODUCTION

At the end of Grade 12, South Africa's last year of formal schooling, students typically write a school-leaving examination called the National Senior Certificate (NSC). The NSC examination is the only national standardised examination and is heralded by the Department of Basic Education (DBE) as "one of the most important barometers of the health of the South African education system" (DBE 2023a, p3). Achieving an NSC pass, commonly referred to as a 'matric' certificate, improves candidates' labour market prospects or supports entry into post-school training and education (Branson et al. 2019; Moses et al. 2017; Yu & Adams 2022).

The proportion of youths leaving the education system with at least a NSC pass or equivalent qualification has been rising in post-apartheid South Africa (Branson et al. 2020; DBE 2024b). Trends in recent years are particularly interesting, as the COVID-19 pandemic—an event that led to a deterioration in a range of socio-economic factors, including learning (Van der Berg & Böhmer 2025; Wills & Van der Berg 2024)—was counterintuitively accompanied by an acceleration in school completion (DBE 2022a).

With a lens on the pandemic period, this chapter examines school completion using household survey data from 2010 to 2024 and NSC results data from 2008[6] to 2023. In doing so, the following questions are investigated:

- By how much has school completion increased since the introduction of the NSC in 2008, and how did the pandemic affect school completion?
- In what ways did NSC cohorts differ in pandemic years relative to previous years, and did expected achievement patterns hold?
- Since the introduction of the NSC in 2008, to what extent have inequalities in NSC results changed over time?
- How many high-level passes in Mathematics and Physical Science are being achieved and to what extent are poorer (Quintile 1-3) schools contributing to this?

We show that over a four-year period (2020 to 2023) where poorer academic performance would be expected, the NSC generated an additional year's worth of NSC passes and an astonishing two additional years' worth of NSC bachelor passes compared, in absolute terms, to NSC achievement over six years between 2014 and 2019. Analysis of the Quarterly Labour Force Survey data is also indicative of school completion improvements over this period. Rising rates of school completion among youth[7] from about 48% in 2010 to 55% in 2018 continued to climb to 60% by 2022, reaching nearly 64% by early 2024. These increases in school completion in recent years have brought South Africa's school completion rates to a level that is high and comparable to other middle-income countries (Department of Basic Education (DBE) 2024b).

[6] The National Senior Certificate (NSC) replaced the former matriculation examination, referred to as the Senior Certificate (SC), in 2008.

[7] Roughly between the ages of 15-34. See section 3.2 for a discussion of the method and Figure 3.

We subsequently provide breakdowns of factors that may have contributed to rising school completion, high NSC pass numbers and relatively buoyant NSC performance during the pandemic. Relatedly, we document compositional changes undergone by NSC cohorts, as well as changes to subject choice patterns, particularly regarding the shares of NSC candidates taking Mathematics and Physical Science which have been declining steadily since 2008.

An encouraging finding is that inequalities in NSC outcomes have been declining significantly since the introduction of the NSC in 2008. We also show that school socio-economic achievement gaps in NSC pass rates and bachelor pass rates shrunk further in years just after the pandemic, in contrast to widening inequalities in learning observed in earlier grades due to the pandemic (Böhmer & Wills 2023).

In addition to documenting trends in NSC performance and school completion, this chapter contributes to debates about the quality of the NSC by exploring if the unexpected patterns that emerged during and immediately after the pandemic might be explained by observable changes (such as age and gender profiles, subject choice and candidates' school quintile) in the composition of NSC cohorts. While we are unable to directly observe changes in the underlying academic competence of NSC cohorts, we find that many observed compositional changes do not support the strong NSC results achieved during the pandemic period. But it is impossible to draw definitive conclusions on this matter given the unprecedented and complex pandemic disruptions that occurred alongside various policy changes, affecting both the sample and results of full-time NSC candidates. Furthermore, one cannot rule out that educational progress in pre-pandemic years, reflected in South Africa's rising performance in international tests, may also account for some improvements (Gustafsson 2023, DBE 2024c). Further analysis of the quality of the NSC, with a focus on the pandemic period, follows in chapter 3 which draws on research by Selkirk (forthcoming), the DBE (2024a) and Whitelaw & Branson (2024).

We now provide some background on the matric examinations before presenting, in section three, the methods and data used in this chapter. Section four then examines school completion rates using household survey data, while section five focuses on trends emerging from the NSC data analysis. The implications of these findings and the subsequent recommendations are discussed in section six.

2 BACKGROUND

2.1 The matric examination and school completion in South Africa

The matric examination in South Africa has a long history, evolving alongside the country's political and educational landscape (Wedekind 2013). The examination was originally introduced in 1858 under the University of the Cape of Good Hope as the country's first formal examination. Since then, it has served as the final school-leaving examination for

students wishing to complete their secondary education, and over the years it has become a key qualification for entry into higher education.

During apartheid, the examination was deeply influenced by the racially segregated education system, with significant disparities in access and quality of education for different racial groups. After the end of apartheid in 1994, the (then-named) Senior Certificate[8] underwent several reforms to ensure greater accessibility and equality (DBE, 2009, p2). In 2008, the Senior Certificate was replaced by the National Senior Certificate (NSC) coinciding with the earlier release of the National Curriculum Statement.

Within South Africa's National Qualifications Framework (NQF), which is distinguished by 10 qualification levels, school completion via an NSC pass is pegged at NQF level 4. This level signifies the completion of secondary education and indicates that an individual has acquired the necessary skills and knowledge to enter the workforce or pursue further studies. The NSC accounts for the majority of South Africa's school-leaving qualifications in any given year. The number of candidates achieving an NSC level equivalent qualification through routes other than writing the NSC in the public system as a full-time candidate, is small by comparison (but certainly not negligible). In 2023, for example, about 15,000 candidates passed the Independent Examinations Board (IEB) examination (Umalusi 2024) compared to approximately 572,983 full-time NSC candidates that achieved an NSC pass the same year (DBE 2024a).

Although part-time NSC pass numbers for 2023 are not known, approximately 39,000 obtain an NSC outside of the year-end process. Another roughly 6,000 individuals obtain the Amended Senior Certificate (ASC) qualification through a separate public route each year (DBE 2024b, p35). Other NQF level 4 qualifications include the National Certificate (Vocational) level 3 (NC(V)3) which can be obtained through Technical and Vocational Education and Training (TVET) colleges, private colleges, and Adult Education and Training (AET) Centres and are geared at supporting further vocational education (Branson et al. 2020, p14). Of the approximately 65,000 NQF level 4 qualifications issued by public and private TVET colleges each year, around a third are accounted for by youths who do not already have the NSC or ASC (DBE 2024b, p35).[9] If these school-level qualifications, obtained through alternative routes to the NSC are viewed against the total number of NSC passes achieved by full-time NSC candidates in 2020 (440,702), this year-end figure should be raised by around 18% (DBE 2024b, p35).

While a school-leaving certificate is strongly associated with providing access into university level programmes, the NSC qualification has "multiple audiences, and multiple purposes" (Wedekind 2013, p12). The certificate should serve as an indication of a student's capabilities to various types of post-school educational institutions, as well as to

[8] Note that 'Senior Certificate' refers to the matric examination prior to 2008, not to the Senior Certificate qualification currently available to adult learners as per the regulations explained in https://www.education.gov.za/Curriculum/SeniorCertificate.aspx.

[9] Although these qualifications are registered at the same NQF level and open pathways to further studies, they may not necessarily be equivalent to the NSC (SAQA 2024).

potential employers and the public. Those who complete the NSC may be seeking to study further locally or internationally towards a wide range of certificates, diplomas and degrees at private and public colleges and universities. The existing structure of the NSC addresses this by establishing four distinct categories of passes: a pass with no access to further study (an NSC pass), a Higher Certificate pass, a Diploma pass, and a bachelor's pass, with the latter three passes named to align with the level of further study a candidate can access with their qualification.

Table 1: Different types of NSC passes and their requirements and post-school uses

	Qualification level	Practical use	General pass requirements	Specific pass requirements
National Senior Certificate pass	Basic school-leaving certificate, no access to further education	Indicates completion of secondary education	Comply with the school-based assessment (SBA) requirements for Grades 10, 11 and 12 and the external assessment requirements of Grade 12 Write a minimum of 7 subjects and pass at least 6*	- 3 subjects passed with ≥40% (including an official home language (HL)) - 3 subjects passed with ≥30% - One subject can be failed, provided there is full evidence of the SBA having been completed
Higher Certificate pass	Access to higher certificate courses at TVET colleges or similar institutions	Indicates eligibility for entry-level vocational training		- Same as NSC pass requirements - ≥30% in the language of learning and teaching (LOLT)
Diploma pass	Access to diploma programmes at universities of technology and other institutions	Indicates eligibility for diploma-level studies at tertiary institutions		- 4 subjects passed with >= 40% (including an official HL and excluding Life Orientation (LO)) - 3 subjects passed with >= 30% (including LOLT)
Bachelor's pass	Access to bachelor's degree programmes at universities	Indicates eligibility for university studies, subject to meeting universities' entrance requirements		- 4 subjects passed with >= 50% (excluding LO) - >= 40% in an official HL - >= 30% in the LOLT

Source: Varghese (2024), DBE (2023a, p23). *Certain exemptions, endorsements, subject-choice provisos and condonations may apply, as discussed in DBE (2023a, p23) and DBE (2012).

The utility of each type of NSC pass, along with the performance-based mechanisms and subject requirements used to distinguish between pass categories, are described in Table 1. There has been much public contestation about the low marks required to pass the NSC or even to obtain a Diploma, with mark requirements as low as just 30% and 40% (see for

example Roberts 2020, 2022). However, Wedekind's 2013 review of other international school-leaving examinations suggests that this is by no means unusual, with very few school systems that set pass marks at 50% for subjects. Furthermore, university/further education minimum entry requirements usually exceed the NSC pass minimum mark thresholds.

Even before the introduction of the NSC in 2008, school completion rates in South Africa had been steadily increasing (Branson et al. 2020). Rising school completion rates were evident in household surveys from at least the 1970s, and improvements continued into post-apartheid South Africa. Much of the pre-COVID post-apartheid gains in school completion were driven by improvements in pass rates: in 1994, there were about 495,000 candidates writing the Senior Certificate with a pass rate of 58%, and by 2012, the NSC pass rate had risen to 74% among the approximately 511,000 candidates who wrote the examinations (Wedekind 2013).

Over the long-term, South Africa's rising school completion has likely been related to a combination of policy reforms, investments in education, and a focus on improving access to schooling for all children. While concerns about the consistency of quality standards in the NSC have been a point of debate—particularly in the transition from the Senior Certificate to the NSC in 2008 (Hunt et al. 2011)—there are strong grounds to believe that improved NSC outcomes observed prior to the pandemic reflect real improvements in education and school completion.

From 2000 to 2016, significant educational progress occurred in South Africa, as evidenced by increases in national performance on international literacy and mathematics tests at both a primary and secondary level (Gustafsson 2020, Böhmer & Wills 2023). Although this progress began to slow between 2015 and 2019, the improvements since 2000 still provide substantial support for the improvement seen in NSC outcomes since 2008. In addition, access to matric improved over time due to the introduction of progression policy that limits how many times a learner can repeat in a phase, which also indirectly decreased pre-matric dropout (Kika & Kotze 2018). While such factors may explain rising school completion rates pre-pandemic, the unprecedented circumstances of the pandemic introduced far more complexity to the interpretation and understanding of NSC results from 2020 onward.

2.2 COVID-19 and the NSC in South Africa

The pandemic period resulted in enormous disruptions to schooling and life in general, yet the NSC examination was retained in 2020 and 2021 at a time where many countries modified or cancelled their school-leaving examinations (UNESCO 2022). Hoadley (2023, p12) maintains that "managing to retain the National Senior Certificate (NSC) examinations, the only high-stakes exit level examination with huge consequences for learners' future academic and work opportunities, was a stellar achievement".

Initially, it was expected that NSC outcomes would be significantly negatively affected both during and after the pandemic. An early simulation of learning losses noted that

"depending on how successful the efforts of the schooling system and individual teachers are in catching up lost learning, below-expected Grade 12 outcomes lasting to at least 2022, and possibly as far as 2031, could be experienced" (Gustafsson & Nuga-Deliwe, 2020, p1). NSC cohorts from 2021 onward were also expected to be adversely affected by candidates' lower exam readiness—given that examinations at every other grade level were cancelled or significantly reduced in favour of extended instructional time during the pandemic. We would also expected the 2021 candidates to be weaker academically as lower repetition and lower dropout rates in the grades preceding matric were seen because of more lenient promotion practices that occurred during the pandemic (DBE 2023b; Wills & Qvist 2023; Van der Berg et al. 2023).

However, as elaborated upon in this chapter, these negative predictions for NSC results did not materialise—or if they did, they are not apparent from *prima facie* results. While there is a growing body of research identifying substantial pandemic-related learning losses and widening learning inequalities in South Africa, particularly in the lower grades (see Ardington et al. 2021; Kotze et al. 2022; Van der Berg et al. 2022; Böhmer & Wills 2023), the pandemic's effects on learning in higher grades, such as matric, remains largely unexplored. This chapter aims to provide greater specificity on NSC trends since 2008 and explores the changes that occurred during and immediately following the COVID-19 pandemic.

3 METHOD

3.1 Data

In this chapter, 'school completion'—the attainment of a NSC pass or equivalent NQF level 4 qualification—is used interchangeably with 'obtaining a matric'. Monitoring school completion is not directly equivalent to tracking NSC results, because youths obtain a matric at a variety of ages and some do so outside of full-time schooling as explained above (DBE 2013, 2024b). To analyse school completion rates, we rather draw on data from the Quarterly Labour Force Survey (QLFS), a nationally representative household survey.

Both the QLFS and Statistics South Africa's General Household Survey (GHS) ask the identical question regarding individuals' education levels: "What is the highest level of education that 'person X' has successfully completed?". Using the data derived from this question, it is possible to roughly gauge what percentage of youth or specific age groups complete secondary education (although some limitations of the data are discussed in chapter 4 by Wills). While the GHS is typically used for analyses on school completion, the QLFS data is preferred in this chapter as its more timeous release allows for the identification of the increases in school completion into 2024.

The second data source used in this chapter's analysis is an anonymised NSC results dataset of individual learners' subject level results from 2008 to 2023. We use this to

examine trends in NSC results over time and to explore what happened to the results of full-time candidates writing the NSC examinations during the pandemic. Although the data contains a limited set of background characteristics, it can still provide insight into how the composition of the Grade 12 cohort changed under the exceptional pandemic circumstances. Information on candidates' age provides insight into repetition and dropout patterns over time, while gender and school quintile indicators are useful for tracking inequalities along these dimensions.

A number of candidates write the NSC as part-time candidates, but these candidates are largely excluded from the results reported by the Department of Basic Education, as well as from our data. As discussed later, this is a shortcoming that presents limitations for the analysis of trends over time. In our own data, we define full-time candidates to be candidates with a non-missing pass status and six or more non-missing subject results. For the remainder of this report, unless otherwise stated, the NSC statistics are presented only for these full-time candidates, and numbers may consequently differ slightly from officially reported statistics.

3.2 Methodology

There are two different approaches commonly used to examine school completion rates in household surveys, and both are employed in this chapter. The first approach is simply to track school completion rates by identifying what percentage of individuals in an age group—for example, 15-34 years—have completed secondary education. The second approach is the one utilised in the widely quoted school completion statistic used in NSC reports, which estimates the 'maximum' completion rate across individuals aged about 20-28.

This 'maximum method' acknowledges that there is statistical error associated with household surveys, and that school completion rates differ by age. For example, the likelihood that a 24-year-old has a matric is typically higher than the likelihood that a 20-year-old has a matric. In household surveys, confidence intervals at specific ages can also be large, especially for certain provinces. In a plot of school completion by age, the 'maximum method' draws a quadratic trendline through school completion by age estimates. The highest point (the turning point) on this trendline is then used as the estimate of the percentage of youth over an age span, in this case roughly 15-34, who will obtain a matric. For more details on this method see DBE (2013, p20; 2016a, p70).

Section 4 examines school completion rates using the two approaches described above, and thereafter a descriptive analysis of the NSC data is provided in section five.

Regardless of the analysis method or data used, long-term increases in the attainment of a matric qualification are evident…Placed in an international perspective, South Africa's 64% school completion rate in 2024 is high and comparable to other middle-income countries.

4 FINDINGS FROM HOUSEHOLD SURVEY DATA: SCHOOL COMPLETION

4.1 National trends

With each successive year, significantly larger proportions of the adult population in South Africa are completing secondary education. This is seen in Figure 1, which identifies school completion rates in the QLFS for individuals aged 20 or older in the years 2010, 2014, 2018, 2022 and 2024. The rise in school completion rates over time is evident for all age groups shown in the 5-year age bins. From 2018 to 2024, the increase is statistically significant for all age groups, even for those over the age of 45 years who would have been well out of school over the entire 6-year period.[10] For youth aged 20–24 years, improvements were particularly large: where roughly 45% had a completed secondary education in 2010, this figure had risen to 51% by 2018, to 57% by 2022 and, with a further increase to almost 61% by 2024 (see Figure 2).[11]

When looking at school completion rates in the QLFS among even younger groups—such as ages 17 to 24—a sharp rise in secondary completion around and just after the COVID-19 period is especially evident (see Figure 2). This aligns with expectations, as youth in this age group would have been more directly affected by more lenient progression policy and curriculum changes over the pandemic period (Hoadley 2023). This is discussed further in section five.

Drawing on the General Household Survey (GHS) and using the 'maximum method' to estimate school completion, the Department of Basic Education reports that the percentage of youth successfully completing Grade 12 has increased from about 45% in 2005 to 62% in 2022 (DBE 2023a, p15). Applying the same method to the QLFS gives a similar trend. As shown in Figure 3, the QLFS identifies the percentage of youth with a completed secondary to be about 48% in 2010, before increasing to 55% by 2018, rising to 60% in 2022 and further increasing to almost 64% at the start of 2024.[12] Regardless of the analysis method or data used, long-term increases in the attainment of a matric qualification are evident. Reasons for the accelerated increases in school completion over the pandemic period will be explored in the analysis of NSC results in section five.

Placed in an international perspective, South Africa's 64% school completion rate in 2024 is high and comparable to other middle-income countries. It compares with 54% in Botswana, 62% in Thailand, and 66% in both Brazil and China (the year being 2015 for these

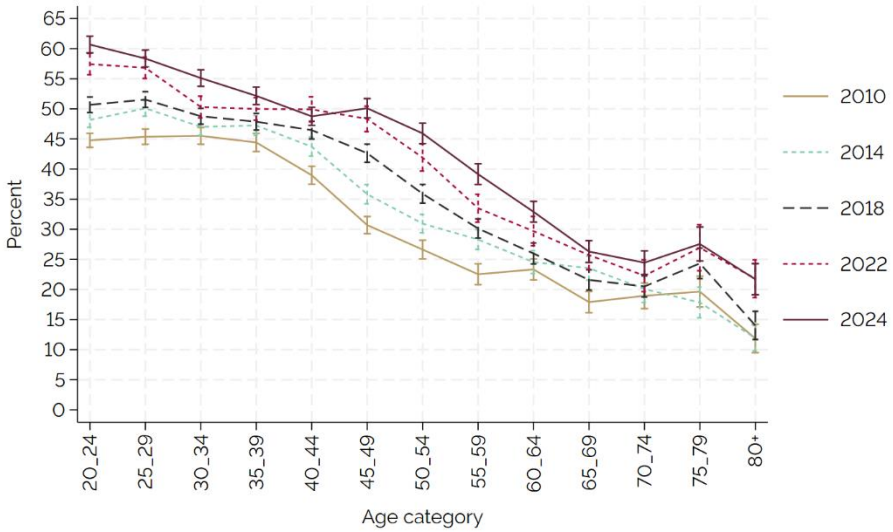
[10] Some, but not all, of the rising rates of secondary completion in 2022 and 2024 relative to say 2018 among some of the older age groups may be related to survey weighting. Some, but not all, of the differences are reduced when using unweighted estimates.

[11] These estimates use quarter 1 of the QLFS.

[12] Depending on which quarters of the QLFS are used and the age range over which the equation is fit, the estimates do vary slightly, therefore the average across the different age range specifications is used (see Appendix Table A 1).

other countries). Before the pandemic, South Africa's figure was relatively low by international comparison (DBE 2024b, p41).

Figure 1: Percent of the population with a completed secondary education by age group and year, QLFS quarter 1, 2010–2024

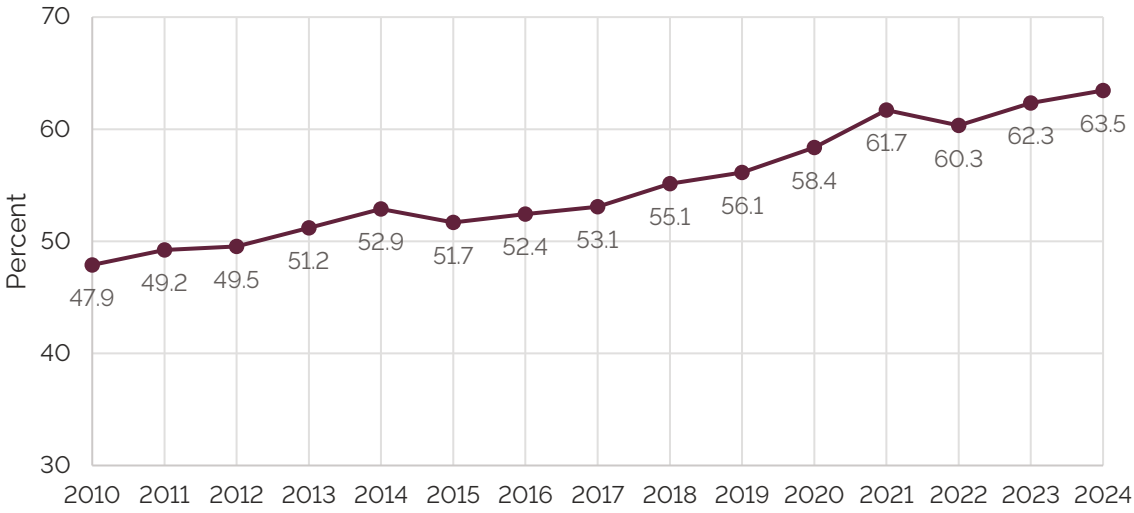


Source: QLFS quarter 1 data, weighted and stratified. CI = 95% confidence interval based on standard errors. Those identified has having a completed secondary include those with post-school qualifications.

Figure 2: Trends in the percent of youth aged 15-24, 20-24, or 17-22 with a completed secondary, QLFS quarter 1, 2010-2024

Source: QLFS quarter 1 data, weighted and stratified. CI = 95% confidence interval based on standard errors. Those identified has having a completed secondary include those with post-school qualifications.

Figure 3: Percent of youth with a completed secondary education, maximum-method approach, QLFS, 2010-2024



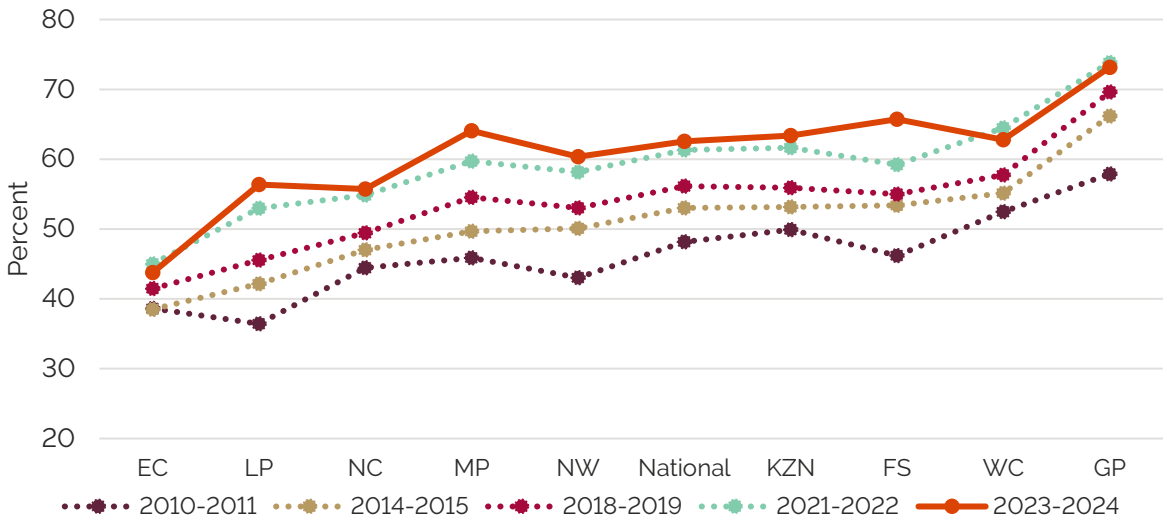
Source: QLFS, multiple quarters. *The percentage of youth with a completed secondary is obtained by fitting a quadratic line to estimates of completed secondary across individuals aged 18-30 and obtaining the maximum point along that curve for each province, and then nationally (i.e. the 'maximum method'). Depending on which quarters of the QLFS are used and the age range over which the equation is fit, the estimates do vary slightly, therefore the average across the different age range specifications is used (see Appendix Table A 1).

4.2 Provincial trends

To explore changes in completed secondary rates among youth at the provincial level, we initially use the 'maximum method', fitting quadratic lines of school completion rates by age. We use data pooled across years 2010-2011, 2014-2015, 2018-2019, 2021-2022 and 2023-2024 to increase sample sizes at the provincial level. Rises in secondary education completion in the COVID (2021-2022) and post-COVID period (2022-2023), relative to pre-COVID (2018 and 2019) are evident nationally and across all 9 provinces in the QLFS.

Across provinces, rising school completion has occurred from vastly different baseline levels, with the highest rates of school completion consistently observed in Gauteng and the lowest rates consistently observed in the Eastern Cape. Since confidence intervals in the QLFS can be large at the provincial level, we are cautious to draw conclusions about relative provincial improvements in school completion. Household survey data patterns may also conflict with NSC patterns due to significant amounts of internal migration (DBE 2024b). An example of this is the Eastern Cape, where household survey data suggests that this province saw the lowest growth in school completion from 2019 to 2023, yet NSC data (as discussed in the next section) indicates that the Eastern Cape province experienced the largest increase in NSC passes over the same period.

Figure 4: Percent of youth with a completed secondary by province, maximum method approach



Source: QLFS, quarter 1-2 for 2010-2011, quarter 1-4 for 2014-2015, 2018-2019 and 2022-2023, and quarter 1 of 2024. *The percentage of youth with a completed secondary is obtained by fitting a quadratic line to estimates of completed secondary by age across ages 18-30 and obtaining the maximum point along that curve for each province, and then nationally (i.e. the 'maximum method'). Years are combined to increase sample size at the provincial level.

5 FINDINGS FROM NSC DATA: NATIONAL AND PROVINCIAL TRENDS IN NSC OUTCOMES

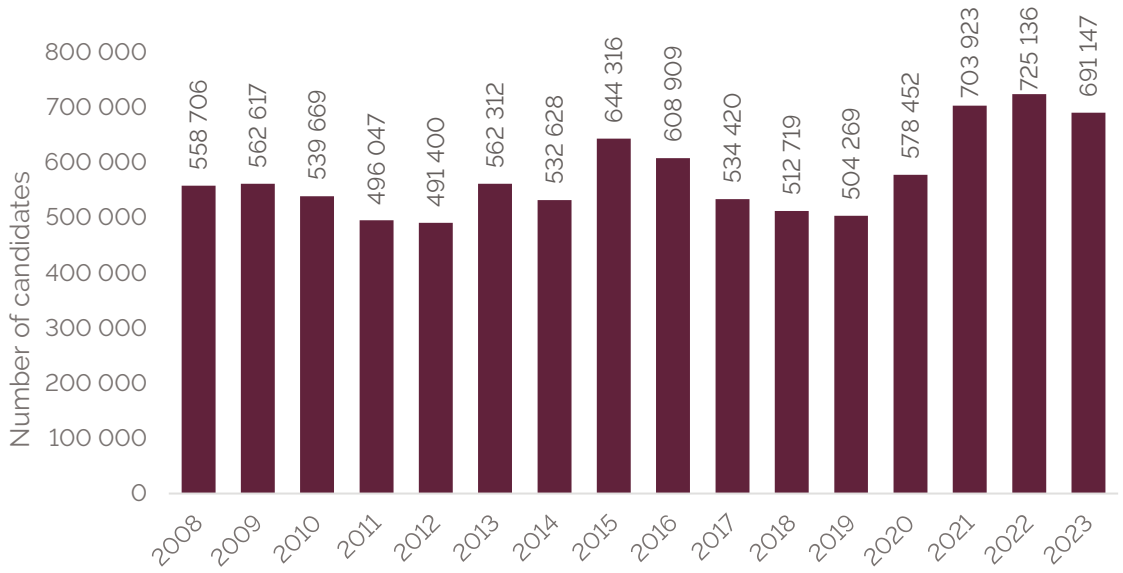
As demonstrated in section four, household survey data strongly implies that school completion accelerated during and just after the pandemic period. The present section corroborates this finding by examining NSC results and attempts to explain this occurrence by investigating various metrics of NSC access and performance. The section also highlights key trends in NSC results over both the long-term and in the years since the pandemic, in areas such as school socio-economic inequality and in STEM subjects (Mathematics and Physical Science).

5.1 Rising candidate numbers

The largest contributing factor to higher school completion over the pandemic period was greater NSC access. The number of full-time candidates writing the NSC examinations rose substantially during the COVID-19 pandemic, and the higher numbers persisted post-COVID. Over 725,000 candidates wrote the NSC examinations in 2022, which was 30% more than the annual average number writing across 2013-2019 and the highest on record, surpassing even those of 2015 when progression policy (see DBE 2015; Kika & Kotze 2018) swelled the numbers. In 2020, candidate numbers were already higher than

usual[13], but the largest increase occurred between 2020 and 2021, with the higher numbers continuing into 2023 (see Figure 5).

Figure 5: Number of full-time candidates writing the November/December NSC Examinations, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). Only candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics.

There are likely three main factors underlying the higher matric candidate numbers in 2021-2023: population changes, increased learner flows, and the removal of the Multiple Examination Opportunity (MEO). These are now discussed in turn.

There are likely three main factors underlying the higher matric candidate numbers in 2021-2023: population changes, increased learner flows, and the removal of the Multiple Examination Opportunity (MEO).

[13] The reason for higher NSC candidate numbers in 2020 is not immediately clear, since the School Realities reports (https://www.education.gov.za/Programmes/EMIS/StatisticalPublications.aspx) show that 2020 had lower Grade 12 enrolment than 2018 or 2019. The most likely explanation for the increase is the removal of the Multiple Examination Opportunity (MEO), as will be shown in this section.

5.1.1 Population changes

In the period 2003-2005, South Africa's birth rates unexpectedly rose by over 12% (Gustafsson 2018, p8). The result would have been more 18-year-olds in the South African population in 2021-2023 than in previous years. However, the effect of this 'baby boom' was likely not fully realised in the NSC numbers by 2021 and 2022[14], so while the higher birth rates may explain some of the higher candidate numbers, they cannot account for most of the increase. This is acknowledged in DBE (2024b, p40) which states that "a simulation that takes into consideration the age distribution of NSC passes suggests demographic factors alone would raise the number of NSC passes between 2019 and 2022 by 7%."

5.1.2 Increased learner flows

In 2020 and 2021, South African schools reduced assessments in response to the pandemic. Most exams—except for the NSC Examinations—were cancelled and replaced by controlled tests, and moderation processes were simplified. And in all grades, the weight of school-based assessments (SBAs) in the calculation of students' final promotion marks was significantly increased. For Grades 10 and 11, the SBA contribution to promotion requirements rose from 25% to 60% (Hoadley 2023). School assessments also became less demanding due to a shortened curriculum, and teachers were instructed to focus assessments only on the material they had been able to cover.

The result was far more lenient assessment in these years, especially in 2020, which drastically reduced the number of learners failing to meet their grade's promotion requirements. In high-repetition grades such as Grades 10 and 11, the resulting decreases in end-of-year repetition rates were substantial (see Figure 6). Administrative data from three provinces and also household survey data (Wills & van der Berg 2024; Wills & Qvist 2023; Van der Berg et al. 2023) show that repetition rates for the end of 2021 and 2022 were likely higher than 2020's, but still substantially lower than before COVID-19.

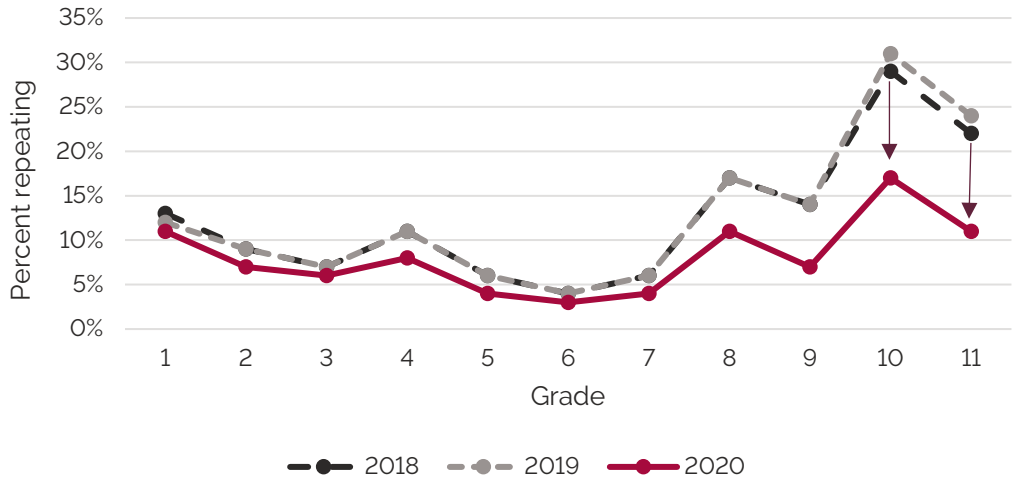
The large declines in repetition would have allowed more learners to access Grade 12 from 2021 onwards, thus boosting the number of NSC candidates. Decreasing dropout rates at the secondary level—both before and during the pandemic (DBE 2023b; Wills & Qvist 2023; Gustafsson 2022)—would also have increased the number of learners reaching Grade 12, although the bigger effect would have come from the lower repetition rates.

An important implication of these changes is that many of the additional candidates writing the NSC in 2021-2023 would have failed Grade 10 and/or 11 without the relaxed promotion standards during the pandemic. This not only weakened the academic strength of the 2021-2023 NSC cohorts, but it also complicates an analysis of NSC results. The

[14] Due to South Africa's high repetition and dropout rates, some South Africans would not be expected to have reached Grade 12 by the year in which they turn 18. As a result, the full effect of the 'baby boom' would likely appear in the NSC candidate numbers with a delay.

reason is that these candidates would not have been classified as 'progressed learners'[15] in NSC reports, despite being similar to—or even academically worse than—progressed learners in previous years.

Figure 6: End-of-year repetition by grade, 2018-2020



Source: Own graph based on National LURITS repetition rates provided in DBE (2023b). The repetition rate reflects the proportion of learners enrolled by grade that are held back at the end of the year and will repeat in the next year.

5.1.3 Removal of the Multiple Examination Opportunity

The Multiple Examination Opportunity (MEO) was introduced in 2016 to provide academically weaker progressed learners the opportunity to write their examinations over two separate examination sittings, but this opportunity was removed in 2020[16]. As a result, more of these candidates likely wrote the NSC examinations in 2020-2023 as full-time candidates, which would have increased the number of full-time candidates while also decreasing the academic strength of these NSC cohorts. MEO statistics are not widely reported, so instead we use alternative statistics to gauge the possible impacts of the MEO's removal on the 2020-2023 NSC cohorts.

Table 2 compares the number of full-time candidates writing the NSC to total Grade 12 enrolments in public and private ordinary schools at the beginning of the corresponding year. It is clear that lower proportions of Grade 12 learners ended up writing the NSC as full-time candidates during years in which the MEO was available (2016-2019), and that

[15] 'Progressed learners' refers to Grade 12 learners who failed to meet the Grade 11 promotion requirements but were allowed to continue to Grade 12, subject to meeting specified progression criteria (see DBE 2016b).

[16] See DBE: "Modularization has been discontinued for grade 12 learners as from 2020" [https://www.education.gov.za/ArchivedDocuments/ArchivedArticles/Modularizationhasbeendiscontinued.aspx – accessed on 10 Oct 2023]

the removal of the MEO contributed to higher full-time candidate numbers from 2020-2023.

Table 2: Comparison between full-time NSC candidate numbers and Grade 12 enrolments, 2014-2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Full-time candidates writing (thousands)	533	644	609	534	513	504	578	704	725	691
Gr. 12 enrolments (thousands)	572	687	705	661	644	641	628	750	776	741
Full-time candidates writing as percentage of Gr. 12 enrolment	93.1%	93.8%	86.4%	80.8%	79.6%	78.7%	92.1%	93.8%	93.5%	93.3%

Source: Own calculations using anonymised NSC data and the publicly available School Realities Reports (see: https://www.education.gov.za/Programmes/EMIS/StatisticalPublications.aspx). 'Grade 12 enrolments' refers to the total Grade 12 enrolment in public and independent ordinary schools, and as a result, 'Full-time candidates writing as percentage of Gr. 12 enrolment' is expected to be below 100% (see footnote 17). Numbers are rounded to the nearest 1,000 for display purposes, but not in the percentage calculations.

Table 3: Statistics on progressed learners entering and then writing as full-time NSC candidates, 2015-2023

	Progressed learners that entered NSC	Progressed learners that wrote NSC	Percent of entered that wrote	Progressed as percent of all full-time writers	Progressed learners that Passed	Progressed learners' pass rate
2015	65 671	58 656	**89%**	**9.1%**	22 060	**37.6%**
2016	108 742	67 510	**62%**	**11.1%**	29 384	**43.5%**
2017	107 430	34 011	**32%**	**6.4%**	18 751	**55.1%**
2018	128 634	33 412	**26%**	**6.5%**	20 122	**60.2%**
2019*	125 691	34 498	**27%**	**6.8%**	23 485	**68.1%**
2020	70 565	65 499	**93%**	**11.3%**	24 244	**37.0%**
2021*	61 789	56 826	**92%**	**8.1%**	21 499	**37.8%**
2022*	52 961	48 361	**91%**	**6.7%**	20 975	**43.4%**
2023*	54 943	49 866	**91%**	**7.2%**	22 688	**45.5%**

Source: Own calculations using numbers reported in the 2015-2023 DBE NSC Examination reports (available: https://www.education.gov.za/Resources/Reports.aspx). Progressed learners are students who move on to the next grade without meeting all the promotion requirements. MEO years include 2016-2019, with relatively low numbers in 2016 compared to later years (Parliament 2019; Parliament 2020). The pass rate is only calculated for progressed learners who wrote as full-time NSC candidates. For years (starred) where the non-progressed learner statistics are not reported (or likely misreported), it is assumed that the reported overall number of candidates is correct, and that this equals the sum of full-time progressed and non-progressed candidates.

[17] Although learners enrolled in independent schools are included in Grade 12 enrolments, not all learners would be expected to become full-time NSC candidates since many independent schools write the Independent Examination Board (IEB) Examinations instead.

Further evidence of the MEO's impact on full-time NSC candidate numbers comes from official statistics on progressed learners (see Table 3). In 2020-2023, over 90% of progressed learners who entered for the examinations as full-time candidates wrote as full-time candidates, compared to just 26% in 2018, with similarly low proportions in the other MEO years.[18] Furthermore, compared to years where the MEO was widely utilised, a higher proportion of all full-time writers in 2020 and 2021 were progressed learners, and their pass rates were much lower. This suggests that during the MEO years, progressed learners who were academically weaker opted to write as MEO—and not full-time—candidates, so the MEO's removal would affect both the size and academic strength of the 2020-2023 NSC cohorts.

Another indication of the MEO's impact on full-time NSC candidate numbers is given in Table A2 in the Appendix, which provides information on the MEO candidates who wrote over the November 2018/June 2019 examination opportunity. There were nearly 80,000 MEO candidates in 2018, which equalled more than 15% of 2018's full-time NSC writers. The weaker academic ability of MEO candidates is strikingly apparent: 2018/2019 MEO candidates achieved a mere 8% NSC pass rate compared to the 60.2% NSC pass rate achieved by progressed learners who wrote as full-time candidates (and were included in the national pass rate of 78.2%).

It is difficult to predict how many candidates would have written as MEO candidates in 2020-2023 if the MEO had still existed—especially given the large provincial differences in MEO utilisation, and the pandemic's impacts on learner progression—but it is clear that the MEO's removal made a substantial contribution to the higher full-time candidate numbers seen since 2020.

Overall, although the exact contribution of each of the three factors—population changes, increased learner flows, and the removal of the MEO—to the higher candidate numbers is unknown, it is plausible that together they explain most of the increase.[19] The first implication of this is that higher candidate numbers are likely to persist in the near future, even if repetition rates return to pre-pandemic levels. The second implication is that the 2020-2023 NSC cohorts should be significantly academically weaker than the preceding years' NSC cohorts, even ignoring any negative impacts from the pandemic. Yet, as is explained in the next section and further discussed in Chapter 3 of this compilation, poorer NSC outcomes did not materialise as expected over the 2020-2023 period.

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[18] The 'in-between' rates in 2016 are attributable to the initial low take-up of the MEO after its introduction, which is also reflected in Table 2. However, even with low take-up, 2016 is still clearly distinct from non-MEO years. Considering Table 3, the pandemic-related repetition changes would have affected both the numbers and academic strength of progressed learners in the 2021-2023 NSC cohorts.

[19] One factor that cannot be investigated with the current data is the prevalence of learners re-writing the NSC as full-time candidates, and if it changed during COVID-19 years. Full-time repeater statistics are not reported in every DBE NSC Examination report, so cannot be tracked as easily, but numbers appear to be relatively small (see, for example, DBE (2022b, p73), although a graph appearing later in the report (p77) seems to conflict with these numbers).

5.2 NSC passes and bachelor passes: Numbers and rates

During the COVID-19 disruptions of 2020, the return to school was prioritised for the 'exit grades' of Grade 7 and Grade 12, since these end of phase grades would not be able to catch up lost time in the next year. It could therefore be argued that Grade 12 learners in 2020 were minimally affected by the pandemic, but the same cannot be said for the 2021-2023 NSC cohorts.

As has already been discussed, NSC performance over the 2020-2023 period would be expected to decline, even in the absence of the pandemic. However, as we will now show, this was not the case.

5.2.1 National trends

Although the NSC pass rate did drop at the start of the pandemic—from 81.3% in 2019 to 76.2% in 2020—it remained stable in 2021 before recovering beyond even pre-pandemic levels and climbing to its historic high[20] of 82.9% by 2023. Meanwhile, the bachelor pass rate remained within the 36-37% range in 2019-2021 before also improving to its highest-ever level of 40.9% in 2023 (see Figure 7). While the rapid recovery of NSC pass rates between 2020-2023 defies expectations, it is difficult to comment on the bachelor pass rates, given the expansion of the list of qualifying subjects in 2018.[21]

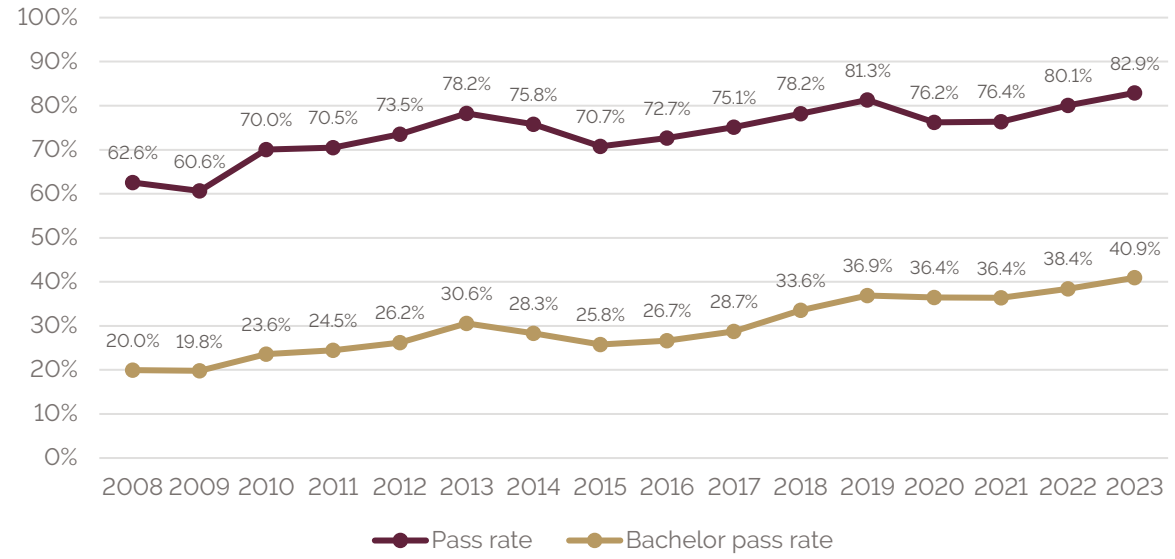
The large increase in candidate numbers without equivalently lower pass rates meant that the absolute number of pass and bachelor passes also reached all-time highs during 2021-2023 (see Figure 8). In 2022, nearly 125,000 more NSC passes were achieved than the pre-pandemic high of 455,788 passes (2014), while the number of bachelor passes achieved in 2023 was over 50% higher than in 2019. The cumulative effects were substantial: over the four-year period 2020-2023, more NSC passes were achieved than in the preceding five years combined (2015-2019) and more bachelor passes were achieved than in the previous six years combined (2014-2019).

Over the four-year period 2020-2023, more NSC passes were achieved than in the preceding five years combined (2015-2019) and more bachelor passes were achieved than in the previous six years (2014-2019).

[20] Placed in a historical perspective, the pass rate in the Senior Certificate of 1994 was just 58% with an exemption pass (equivalent to an NSC bachelor pass) rate of 17.9% (Wedekind 2013, p17).

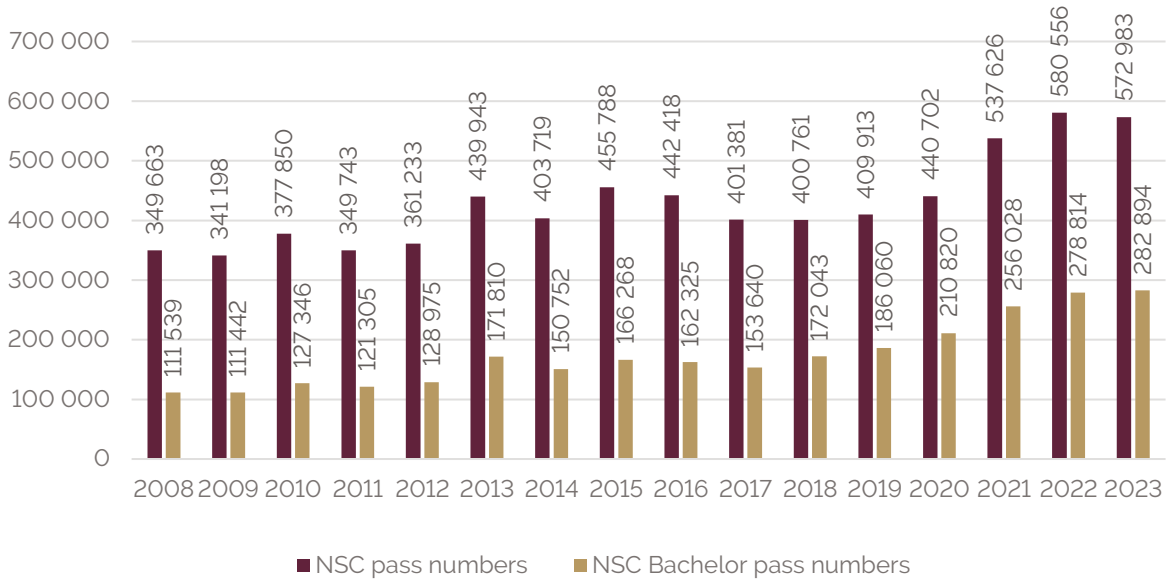
[21] In 2018, the list of subjects qualifying for a bachelor pass was revoked (DBE 2018), meaning more candidates in 2018-2022 were potentially eligible for bachelor passes. It is not currently known how many candidates were affected by this change or how much of the recent bachelor pass rate improvements can be attributed to it.

Figure 7: National full-time NSC pass and bachelor pass rates, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics.

Figure 8: The number of full-time NSC passes and NSC bachelor passes, 2008-2023



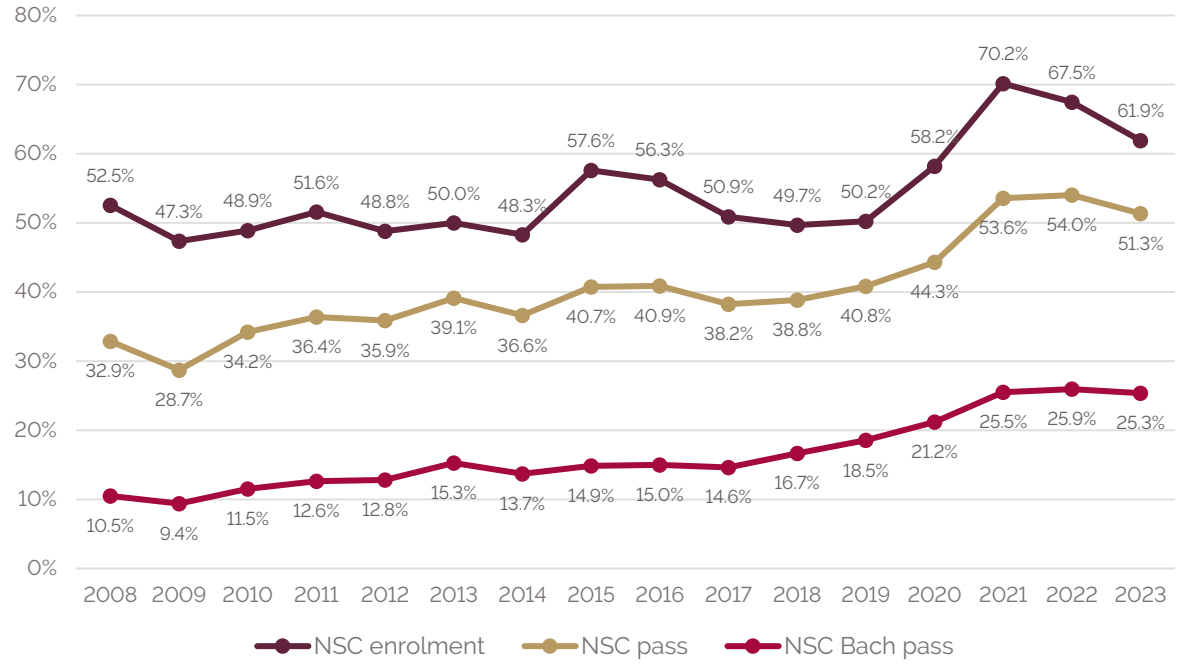
Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics.

5.2.2 Efficiencies

The combined effect of improved learner flows to Grade 12 (due lower repetition and less dropout) and improved success in the NSC (as reflected in rising pass rates) is higher efficiency in the South African school system. In other words, South African learners are reaching and completing Grade 12 at faster and higher rates.

One way of illustrating this is to compare the number of Grade 2 learners[22] to the number of learners writing and passing the NSC 10 years later. Although such a method doesn't track individual learners, and is therefore more of a 'pseudo-efficiency' measure, it still provides a sense of South Africa's large efficiency gains over time (see Figure 9).

Figure 9: NSC enrolment and achievement as proportion of prior Grade 2 enrolment



Source: Own calculations using anonymised learner-level full-time NSC subject data (2008-2023) and Grade 2 enrolment from SNAP data[23]. Percentages are obtained by dividing the relevant NSC number by Grade 2 enrolment from 10 years prior, and numbers on the x-axis correspond to the NSC year. For example, 2016 uses 2016 NSC outcomes and 2006 Grade 2 enrolment. Only full-time candidates with six or more written subjects and a non-missing pass status are included in the numerator. Similar patterns are obtained if the Grade 3 cohort 9 years prior is used.

[22] Grade 2 enrolment is used instead of Grade 1 enrolment because the latter tends to be inflated and more variable due to historically high repetition rates in the first year of school.

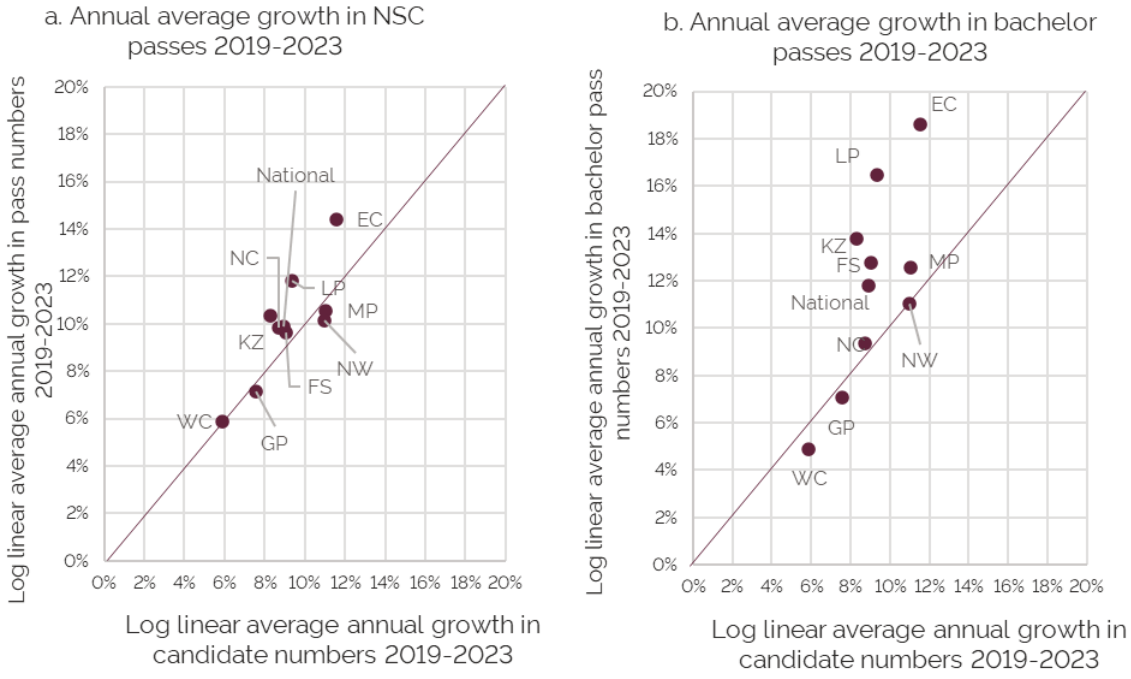
[23] South African Department of Basic Education. Snap Survey of Ordinary Schools 1997-2016 [dataset]. Version 1.6. Pretoria: DBE [producer], 2017. Cape Town: DataFirst [distributor], 2017. DOI: https://doi.org/10.25828/2e3e-9x02

NSC passes in 2008 only equalled about 33% of the pseudo-cohort's corresponding (1998) Grade 2 enrolment, but this proportion increased steadily over time for subsequent NSC cohorts. Peak 'completion rates' were reached in 2021 and 2022, where NSC passes in these years represented approximately 54% of prior Grade 2 enrolment. NSC enrolment as a proportion of prior Grade 2 enrolment—a proxy for survival to matric—followed a similar pattern to that of passes, but with much steeper increases to reach a peak of 70% for the 2021 NSC cohort.

5.2.3 Provincial trends

Not all provinces' NSC outcomes changed equally over the pandemic period, with differential growth experienced in Grade 12 cohort sizes, passes and bachelor passes.[24] Figure 10 illustrates the substantial provincial variation in the average annual log-linear growth rates[25] of the number of full-time NSC candidates, passes, and bachelor passes between 2019 and 2023.

Figure 10: Average annual growth in NSC passes and bachelor passes compared to growth in full-time candidates from 2019-2023, by province



Source: Anonymised learner-level NSC subject data (2019-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included. The line reflects a 45-degree line of equality.

[24] Provincial differences in repetition and dropout rates pre-pandemic, as well as migration, population changes, and different implementation of policy during the pandemic would all have contributed to the different growth rates observed across provinces over the 2019-2023 period.

[25] Log-linear growth rates are used to avoid the influence of outlier values on average growth rates.

Between 2019 and 2023, all provinces experienced relatively large growth in the number of full-time candidates writing and passing the NSC examinations. In most provinces, the average annual growth in NSC pass numbers and bachelor pass numbers outweighed growth in full-time candidate numbers between 2019 and 2023 (see Figure 10). The provinces with the largest average annual increase in candidates during this period were Eastern Cape, Mpumalanga, and North-West, with average annual increases in the region of 11-12%. Table 4 highlights how much more growth was observed from 2019 to 2023 compared to earlier five-year periods (2008-2014 or 2014-2019).

Table 4: Log-linear average annual growth in full-time NSC candidates, passes and bachelor passes by province

2008-2014	**EC**	**FS**	**GP**	**KZ**	**LP**	**MP**	**NW**	**NC**	**WC**	**National**
Full-time candidates	1.6%	-2.6%	-0.9%	0.7%	-3.6%	-2.9%	-2.7%	-2.1%	1.1%	-0.8%
NSC pass numbers	6.2%	0.9%	1.7%	4.3%	2.6%	5.6%	1.5%	-0.2%	2.6%	3.2%
NSC bachelor pass numbers	7.9%	6.0%	3.7%	8.1%	8.2%	11.0%	6.7%	2.8%	5.2%	6.6%
2014-2019	**EC**	**FS**	**GP**	**KZ**	**LP**	**MP**	**NW**	**NC**	**WC**	**National**
Full-time candidates	-3.7%	-2.5%	-1.5%	-5.7%	-3.3%	-2.6%	-0.9%	-1.2%	0.2%	-3.1%
NSC pass numbers	0.6%	-1.1%	-0.8%	-1.5%	-2.7%	-2.4%	-0.7%	-0.8%	-0.2%	-1.2%
NSC bachelor pass numbers	7.6%	3.1%	2.8%	4.0%	0.7%	3.0%	2.7%	3.5%	1.9%	3.2%
2019-2023	**EC**	**FS**	**GP**	**KZ**	**LP**	**MP**	**NW**	**NC**	**WC**	**National**
Full-time candidates	11.6%	9.1%	7.6%	8.3%	9.3%	11.1%	11.0%	8.7%	5.9%	8.9%
NSC pass numbers	14.4%	9.6%	7.2%	10.3%	11.8%	10.6%	10.1%	9.8%	5.9%	9.9%
NSC bachelor pass numbers	18.6%	12.8%	7.1%	13.8%	16.5%	12.6%	11.0%	9.4%	4.9%	11.8%
2008-2023	**EC**	**FS**	**GP**	**KZ**	**LP**	**MP**	**NW**	**NC**	**WC**	**National**
Full-time candidates	2.3%	1.1%	2.4%	1.0%	0.6%	1.2%	2.4%	1.5%	2.2%	1.6%
NSC pass numbers	5.0%	2.6%	3.1%	2.8%	2.5%	3.7%	3.1%	1.9%	2.4%	3.1%
NSC bachelor pass numbers	9.8%	6.5%	5.1%	6.3%	6.7%	7.9%	5.5%	5.2%	4.4%	6.2%

Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and growth rates represent log-linear average annual growth.

The Eastern Cape stands out as a province with exceptionally high increases in bachelor passes and, to a lesser extent, in passes between 2019 and 2023. The province had average annual growth rates of 14% and 19% in NSC passes and bachelor passes, respectively, which surpassed its 12% average annual growth in full-time writers (see Table 4). Limpopo and KwaZulu-Natal also saw average annual growth in bachelor pass numbers that significantly exceeded their growth in candidate numbers. In contrast, the

average annual growth in candidate, pass and bachelor pass numbers over 2019-2023 were lowest in Gauteng and Western Cape, although these two provinces started from a higher base and their growth rates in NSC outcomes mostly kept pace with their growth in candidate numbers.

The large provincial differences are surprising and require further exploration. It is not immediately apparent why such differences should exist or why historically poorer performing provinces were not more adversely affected by the pandemic. This is especially true if growth in candidate numbers was mainly driven by more lenient promotion and the removal of the MEO—rather than higher birth rates—but, as with the pandemic's impacts, the contribution of each of these factors to the overall growth in candidate numbers would vary by province.

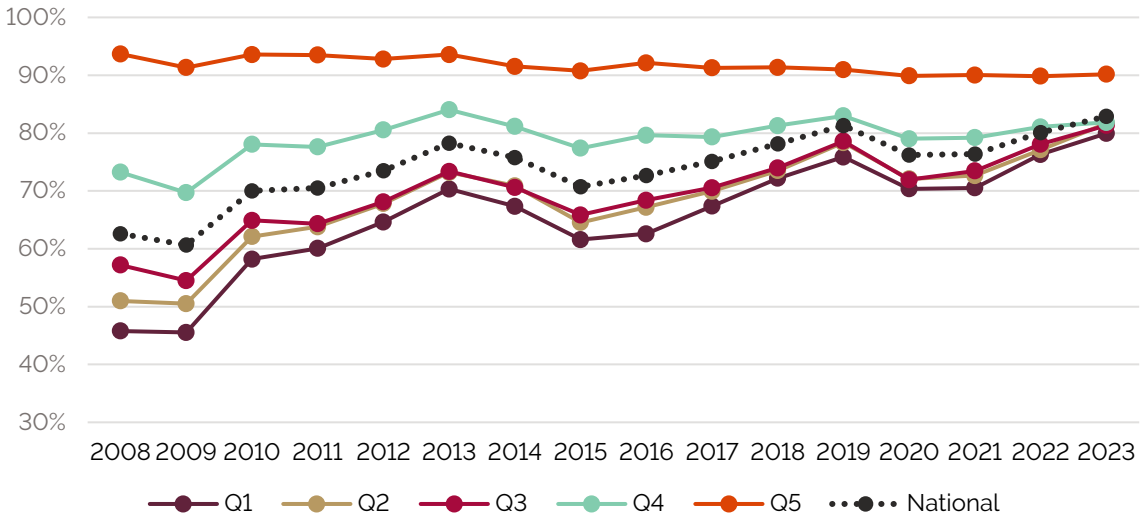
5.2.4 Inequality trends by school quintile

Since the introduction of the NSC in 2008, there has been a significant overall decline in inequality in NSC achievement across poorer and wealthier public schools. Figure 11 compares NSC pass rates across school quintiles for the period 2008 to 2023, where the closing of the school socio-economic gap in NSC achievement is evident. The reduction in inequality is even more apparent in Figure 12 where the achievement gap in NSC pass and bachelor pass rates is expressed relative to performance in Quintile 5 schools.

An example of the large decrease in inequality is seen by comparing the achievement of candidates in Quintile 1 schools to the achievement of candidates in Quintile 5 schools. In 2008, the NSC pass rate for candidates in Quintile 5 schools was close to 48 percentage points higher than the pass rate for candidates in Quintile 1 schools. By 2023, the gap had reduced to just 10 percentage points, representing an almost five-fold decline. The reduction in the bachelor pass rate over the same period was not as large—from about 48 percentage points in 2008 to 19 percentage points in 2023—but equity gains were still significant.

Despite the overall equity gains from 2008 to 2023, there have been periods of temporary erosion in equity. For example, between 2019 and 2021, poorer (Quintile 1 to 3) schools experienced higher growth in candidate numbers (Van der Berg et al. 2023, p12), which was accompanied by steeper declines in pass rates compared to wealthier schools (see Figure 11. This erosion in equity could also illustrate that greater negative pandemic impacts were suffered by poorer schools. Regardless of the cause for the declining pass rates, there was a surprising turnaround during the 2021-2023 period to reach the smallest achievement gap on record between Quintile 1 to 3 schools and Quintile 5 schools by 2023.

Figure 11: NSC pass rates by school quintile, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). 'Q' refers to school quintile. Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Learners in independent schools or missing quintile data are not shown on the graph but are included in the national pass rate. The y-axis does not start at 0%.

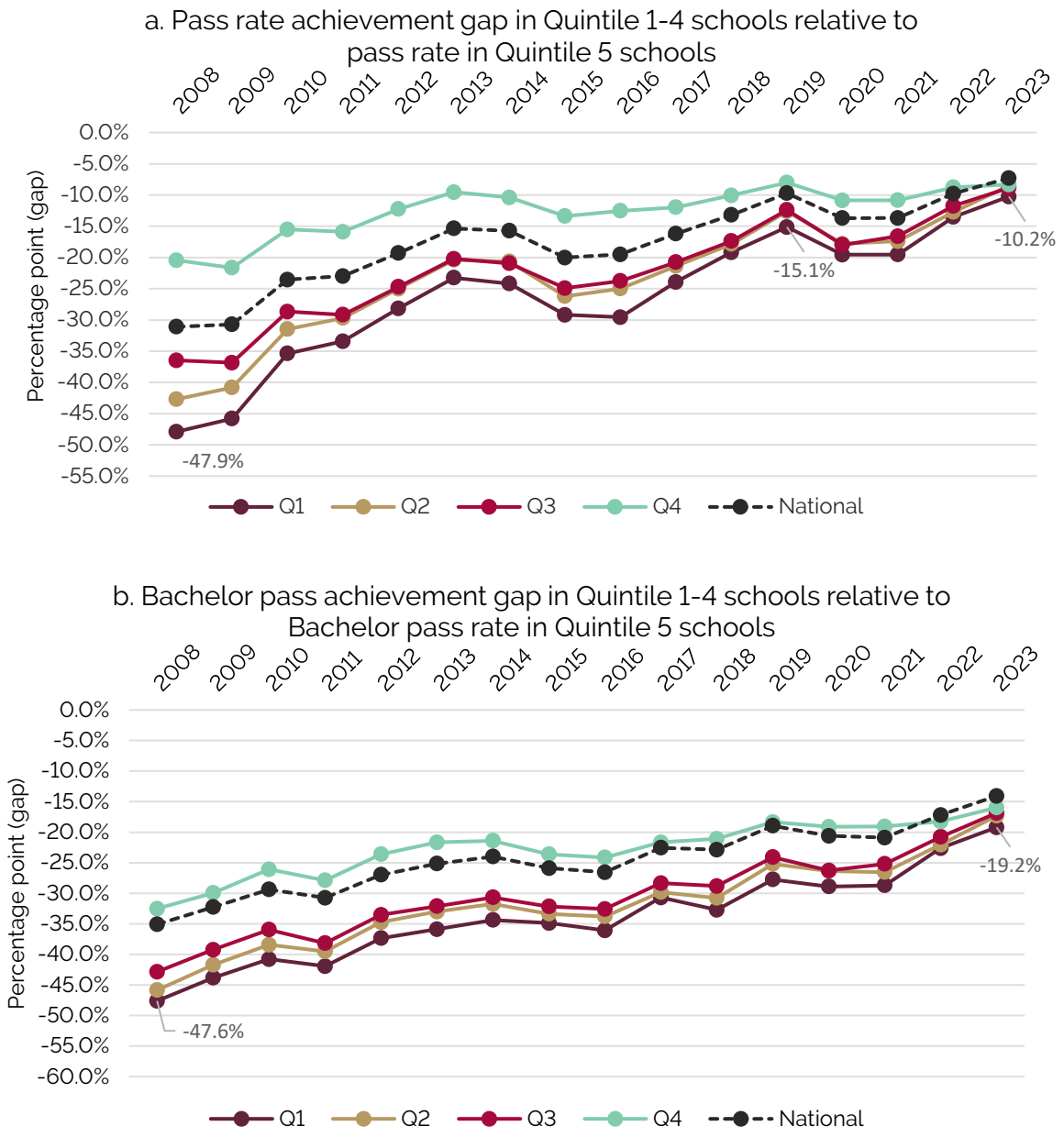
It is unclear why poorer schools would have been adversely affected only in 2020, with rapid gains in the three years that followed.[26] As already discussed, this contrasts achievement trends in earlier grades in 2021 where learning inequalities in mathematics and reading had widened between poorer and wealthier schools compared to pre-pandemic years (Van der Berg et al. 2022; Böhmer & Wills 2023).

It is evident that trends in national NSC outcomes defied expectations[27], especially over the 2021-2023 period. In the next section, we examine observable compositional differences in the Grade 12 cohorts over time, to see if there are factors that might explain the better-than-expected results.

[26] As mentioned in DBE (2024a, p28), vacation classes were implemented as an extraordinary support programme during the pandemic. It is possible that that Quintile 1 to 3 schools were targeted by (or made more use of) such classes during 2021-2023, and that this accounts for improvements in these schools post-2020. However, more information on the vacation classes is needed to verify the plausibility of this explanation.

[27] DBE (2024a, p14) also acknowledges that the growth in NSC passes was higher than expected, stating that once demographic factors and improved survival to matric are taken into account, "NSCs in 2022 were 21% higher than what could be expected." They speculate this could be attributable to pre-pandemic promotion practices being somewhat ineffective at predicting Grade 12 readiness. However, the pre-pandemic results of progressed learners and MEO candidates suggest that failing learners were, in reality, less ready for Grade 12, so this theory does not satisfactorily explain the better results.

Figure 12: NSC achievement gap in Quintile 1-4 schools relative to NSC achievement in Quintile 5 schools, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). 'Q' refers to school quintile. Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Learners in independent schools or missing quintile data are not shown on the graph, but are included in the national pass rate. The y-axis does not start at 0%.

Since the introduction of the NSC, there has been a significant overall decline in inequality in NSC achievement across poorer and wealthier public schools.

5.3 Compositional changes among NSC cohorts: Gender and age

Although our data contains limited information on NSC candidates' individual characteristics, two of the available characteristics—age and gender—are known to be associated with learning outcomes. In this section we will show that both these characteristics changed in levels or in their association with achievement during the pandemic years.

From 2008-2019, the NSC pass rate for male candidates was consistently higher than that of female candidates. This gap narrowed in 2020 and was virtually non-existent from 2021-2023….Patterns in bachelor pass rates also altered from 2020 onwards, moving from no clear gender differential during 2010-2019 to a pro-female achievement gap in 2020-2023.

5.3.1 Gender

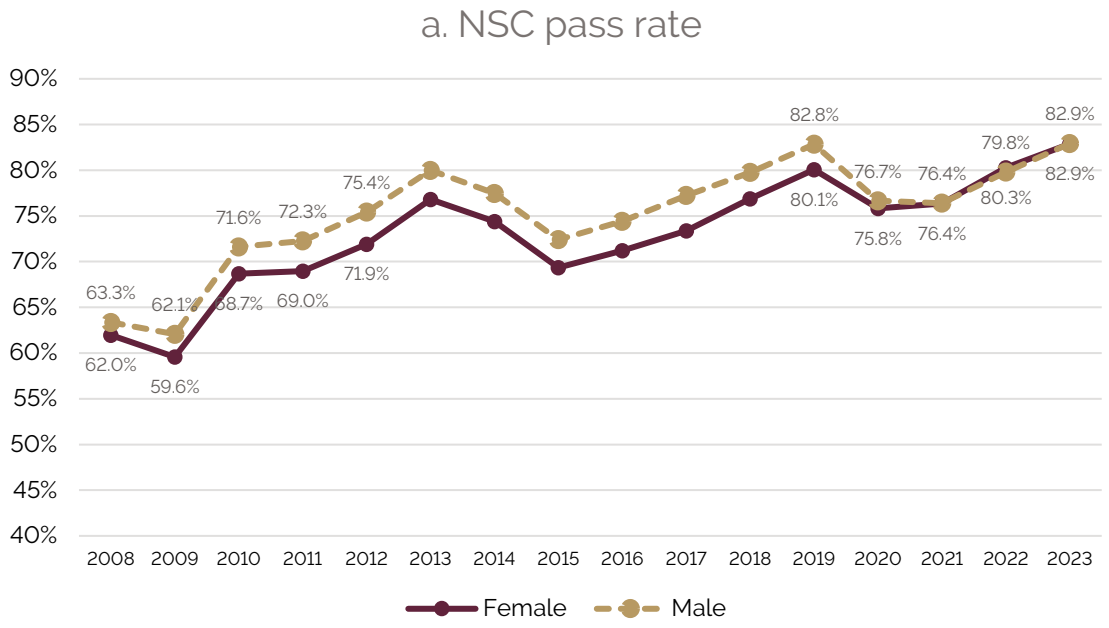
Although girls outperform boys in lower grades, males usually do better in matric than female candidates, since academically weaker male learners are more likely to drop out before reaching Grade 12 (Spaull & Makaluza 2019; Wills & Qvist 2023). Because of this, there is also usually a higher share of female learners writing the NSC. This section will show that, even though the gender composition of NSC cohorts did not change much during the pandemic, there was a visible and persistent change favouring the achievement of female candidates.

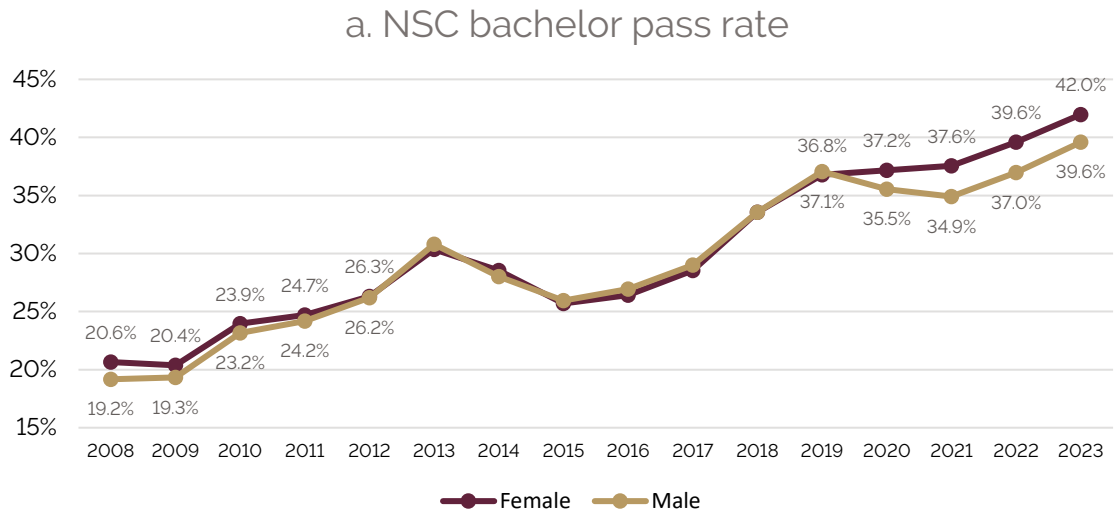
In 2021, 55.3% of full-time NSC candidates were female, which was only slightly less than preceding years (55.7% in 2019 and 55.8% in 2020), and still higher than the low of 54.4% (in 2014 and 2015) between 2013 and 2021. The years 2022 and 2023 saw slightly higher proportions of female candidates (56.2% and 56.4%, respectively), but this was still not a large departure from historic rates.

In contrast, achievement patterns underwent notable changes. From 2008-2019, the NSC pass rate for male candidates was consistently higher than that of female candidates (see Figure 13a). This gap narrowed in 2020 and was virtually non-existent from 2021-2023, a clear departure from pre-pandemic patterns. Patterns in bachelor pass rates also altered from 2020 onwards, moving from no clear gender differential during 2010-2019 (see Figure 13b) to a pro-female achievement gap in 2020-2023. The disappearance of the pro-male pass rate gap and the development of a pro-female bachelor pass rate gap

suggest that the male cohorts during the pandemic were overall academically weaker than in previous years.[28]

Figure 13: Full-time NSC pass rates and NSC bachelor pass rates by gender, 2008-2023





Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status and gender are included, and numbers may differ slightly from officially reported statistics. Note that female percentages are shown in crimson. The y-axes do not start at 0%.

[28] It is unlikely that this is a cohort-specific anomaly, given how consistent the patterns were from 2013-2019 and the consistency of the new pattern from 2020-2023.

Male learners are typically overrepresented among repeaters and dropouts—and possibly in the MEO numbers too[29]—so more of these learners reaching matric during the pandemic would be consistent with an academically weaker male cohort in those years. However, to alter the gender-specific achievement patterns to the extent shown, a larger shift towards males in the NSC's overall gender composition would be expected.[30] The new patterns are perplexing, and more research is needed to better understand gender dynamics in the NSC and exactly what changed during the pandemic to advantage female candidates—or disadvantage male candidates—compared to pre-pandemic years.

5.3.2 Age

In South African schooling there are strong correlations between age and academic achievement.[31] This is clearly demonstrated in the NSC results, where achievement worsens for each additional year that a candidate is overage (see Figure 14). In the COVID-disrupted years (2020 and 2021), overage candidates (particularly those three or more years overage) experienced notable declines in their NSC pass rates relative to correctly-aged candidates, but overage candidates' pass rates rapidly recovered during 2021-2023.

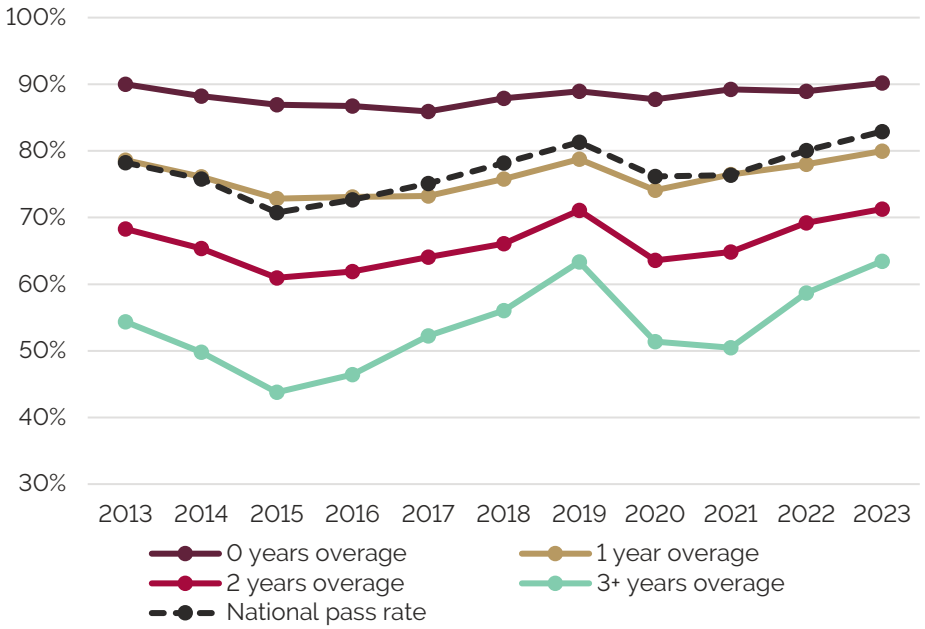
A comparison of NSC achievement and the share of overage candidates writing the NSC yields interesting results. The negative association between overage status and achievement is apparent in both the short- and long-term, whereby the NSC pass rate and the share of overage candidates tend to move in opposite directions (see Figure 7). A short-term exception to this trend occurs in 2021, where a relatively large increase in the proportion of overage candidates—from 50.1% in 2020 to 53% in 2021—was accompanied by an 0.2% rise in the NSC pass rate. This raises the question of whether leniency may have existed in the 2021 examinations, a topic that will be discussed further in chapter 3.

[29] Statistics on MEO candidates are not disaggregated by gender, but if male learners are more likely to fail Grades 10 and/or Grade 11, it would be likely that a higher proportion of male learners would qualify for the MEO.

[30] If most of the additional learners reaching matric during the pandemic were academically weaker male learners, the overall share of female candidates writing the NSC would have decreased, which was not the case. Rather, in 2022 and 2023 there were proportionally more female candidates, which would be more consistent with an academically weaker female cohort than with a weaker male cohort.

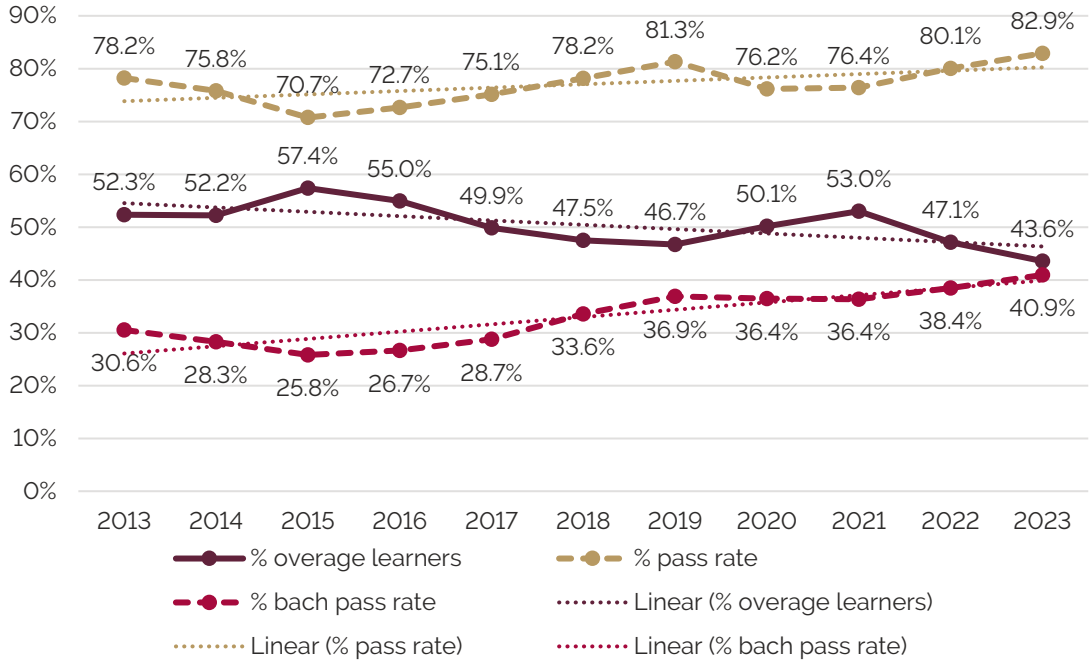
[31] Most South African children enter school at the correct age and become 'overage' through repetition, so being overage is usually associated with lower academic performance, and therefore lower achievement.

Figure 14: Full-time NSC pass rate by age status, 2008-2023



Source: Anonymised learner-level NSC subject data (2013-2023). Only full-time candidates with six or more written subjects and a non-missing pass status and age are included, and numbers may differ slightly from officially reported statistics. '0 years overage' includes candidates 18 years or younger in the December of the year in which they wrote the NSC examination. Data for 2008-2012 is not shown due to high levels of missing data on age.

Figure 15: Percent of full-time NSC candidates that are overage against national NSC pass rates and bachelor pass rates over time, 2008-2023



Source: See notes to Figure 14.

Figure 15 also shows how the proportion of overage candidates writing the NSC closely tracks the policies and pandemic-related progression changes already discussed in this chapter. In the years 2015 and 2016 where progression policy allowed more learners to access matric, the proportion of overage NSC learners were at their peak levels. The proportion of overage candidates subsequently declined during the MEO years—likely as overage candidates opted into the MEO—before rising steeply in 2020 and 2021[32] as the MEO was removed and more lenient promotion was applied at the end of 2020.

An unexpected change is the large decline in the proportion of candidates that are overage between 2021 and 2023, reaching a low of just 43.6% in 2023 - the lowest on record over the 2008-2023[33] period (see Figure 15). While not as low as in 2023, the share of overage candidates in 2022 (47.1%) was still lower than most of the MEO years. While it is not clear why the 2022 and 2023 NSC cohorts should have had such a reduced share of overage candidates,[34] the lower shares do support the better-than-expected NSC achievement in these years. Given the potential implications for progression and promotion policy in the Further Education and Training (FET) phase (Grades 10 to 12), it is important that more research is done to determine how much of the improved NSC age profiles post-pandemic was attributable to the pandemic's impact on flows.

5.4 Subject choice: Mathematics and Physical Science

Increasing the supply of NSC candidates with Mathematics and Physical Science is considered key to addressing South Africa's skills shortages, since achievement in these subjects enables learners to apply for Science, Technology, Engineering and Mathematics (STEM) degrees. The numbers and percentages of candidates choosing those subjects and achieving high-level passes[35] therefore provide important metrics to gauge the future supply of technically skilled individuals for the workplace.

Here we consider how trends in Mathematics and Physical Science subject choice and achievement have changed over time, before considering how this differs by the socio-economic status of schools. We also discuss whether subject choice patterns could support the better-than-expected NSC results observed during the pandemic.

5.4.1 Trends in Mathematics and Physical Science subject choice

Over time, there has been a significant decline in the proportion of students choosing Mathematics and Physical Science. Between 2008 and 2023, the percentage of

[32] The increase in the percentage of overage candidates in 2020 and 2021 was largely driven by higher proportions of candidates in the '2 years overage' and '3 or more years overage' categories (see Table A 3 in the Appendix).

[33] Age data from 2008-2012 is incomplete, but likely underestimates the proportion of overage candidates. Despite this, the proportion of overage candidates in these years is still higher than in 2022 and 2023.

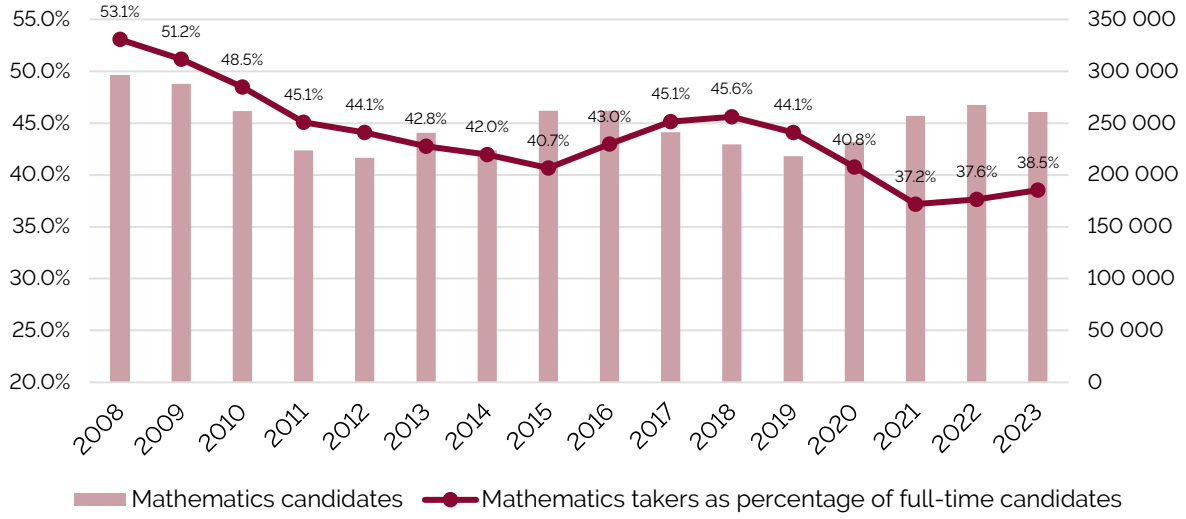
[34] Since the 2022 and 2023 NSC candidates would only have been subject to more lenient promotion in their final few years of schooling—by which stage many of the would-be repeaters would likely already be overage—it is surprising if observed decreases in the proportion of overage candidates are solely attributable to more lenient promotion during the pandemic.

[35] A 'high level pass' is defined here to be a final mark of 60% or more in the specified subject.

candidates[36] writing the NSC Mathematics examination decreased from 53.1% to 38.5% (see Figure 16). There was a steady movement away from Mathematics over the 2008-2015 period, but this trend was reversed during the MEO years before a steep drop between 2019 and 2021 brought Mathematics subject choice to its historical low of 37.1%. Although 2022 and 2023 saw slightly more candidates choosing Mathematics, the rates remained much lower than earlier years. The percentage of candidates[37] writing Physical Science followed a similar pattern, dropping from 38.6% in 2008 to 29.7% by 2023, with the historic low of 27.8% also experienced in 2021.

Despite declining proportions of candidates writing Mathematics or Physical Science, the number of candidates writing each subject still rose between 2019 and 2023 (for Mathematics, see Figure 16). This was because the much higher NSC candidate numbers in 2021-2023 outweighed the decline in the percentage of candidates choosing these subjects.

Figure 16: Numbers of candidates writing Mathematics and percent of full-time candidates writing Mathematics, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Percentages are expressed as a proportion of all full-time Mathematics and Mathematical Literacy candidates, therefore Technical Mathematics Candidates are excluded from calculations (affecting 2018-2023).

[36] Since 2018, approximately 2% of full-time NSC candidates wrote Technical Mathematics instead of Mathematics or Mathematical Literacy. 'The percentage of candidates' here therefore refers to the percentage of non-Technical Mathematics candidates, not to the entire NSC full-time cohort.

[37] Here, 'percentage of candidates' is calculated according to the entire full-time NSC enrolment.

It is difficult to make any firm conclusions about the relationship between subject choice and overall NSC achievement—lower proportions of candidates choosing Mathematics could indicate an academically weaker cohort (which would decrease NSC achievement) or could alternatively indicate more appropriate subject choice (which would increase achievement[38]).

The lower proportion of candidates choosing Mathematics during the pandemic does align with other indicators that the 2020 and 2021 cohorts were academically weaker than in previous years, but 'easier' subject choice could also have mitigated the weaker candidates' negative effect on NSC pass rates. It is therefore hard to speculate whether these subject choice patterns support or contradict the 2020-2021 NSC results. A more convincing argument can be made in support of the 2022-2023 results—if the age profile of NSC candidates in these years is interpreted as these cohorts being academically stronger than previous cohorts, then the still-low rates of Mathematics subject choice in 2022 and 2023 could be a mechanism through which the NSC pass outcomes improved.

5.4.2 Trends in Mathematics and Physical Science subject choice by Quintile

Subject choice patterns differ across school quintiles in a surprising way. Figure 17 shows that from 2017-2021, the percentage of full-time candidates writing Mathematics was highest in the poorest (Quintile 1) schools, and lowest in Quintile 3 and 4 schools. In 2022 and 2023, matric candidates in Quintile 1 schools were equally as likely to take Mathematics as students in Quintile 5 schools, and candidates in Quintile 3 and 4 schools remained least likely to take Mathematics. Similar subject choice patterns by quintile exist for Physical Science (see Figure A3 in the Appendix).[39] These trends are surprising given that poorer quintiles usually have worse academic outcomes and would be thought to have proportionally fewer candidates choosing more challenging subjects like Mathematics and Physical Science. Table 5 provides the distribution of candidates by quintile[40] in three subjects—Mathematics, Mathematical Literacy and Physical Science—along with the share of overall NSC enrolment in selected years between 2008 and 2023. In all three subjects, the share of learners in Quintile 1 to 3 schools rose between 2013 and 2023, largely driven by the higher share of overall NSC enrolment in these schools. What is interesting, though, is that the Quintile 1 to 3 schools' shares of Mathematics and Physical Science candidates grew at a higher rate than their enrolment share, with most of the disproportionately high growth taking place between 2019 and 2021.

The increase in Quintile 1 to 3's share of national NSC enrolment from 64% in 2019 to 70% in 2021 would, on its own, be expected to decrease overall NSC achievement, given the higher number of candidates—in both relative and absolute terms—coming from poorer

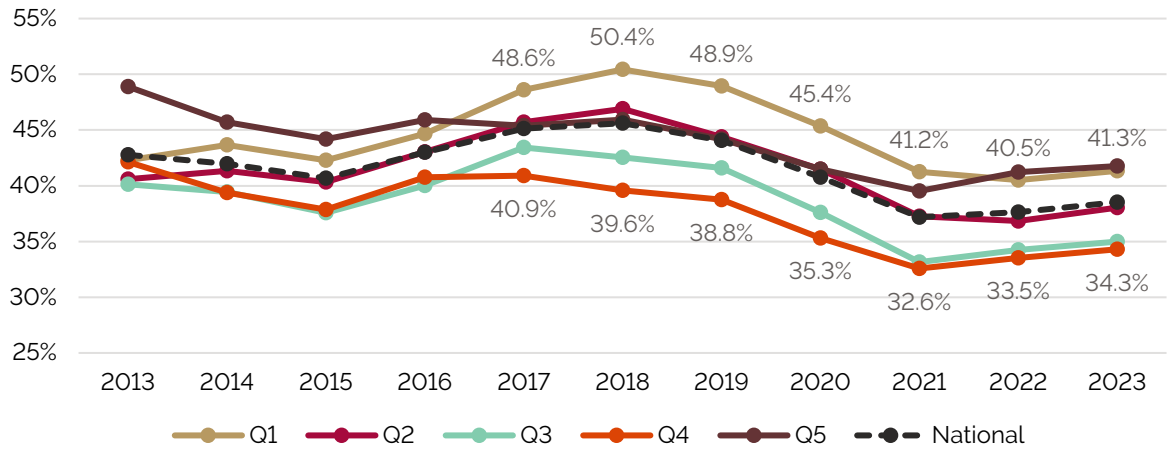
[38] Van der Berg et al. (2023, p19) show that 50% of the learners who failed the NSC in 2021 failed Mathematics—with only 17% failing neither Mathematics nor Mathematical Literacy—clearly demonstrating that inappropriate subject choice could be negatively impacting candidates' pass outcomes.

[39] One difference is that Physical Science choice was highest in Quintile 1 schools over the entire 2013-2023 period, while Quintile 5's rates were closer to—and sometimes lower than—Quintile 3's rates during 2017-2023.

[40] Quintile 1 to 3 schools are grouped together because of their similar NSC achievement (see Figure 11).

resourced schools. When it is also considered that these schools' shares of Mathematics and Physical Science candidates rose at similar (or higher) rates, it is therefore surprising that the decline in NSC pass rates was not larger for these schools.[41] It is also unusual that overall subject performance was not adversely impacted by these changes, as will now be shown.

Figure 17: Percent of full-time candidates in each quintile writing the NSC Mathematics examination, 2013-2021



Source: Anonymised learner-level NSC subject data (2013-2023). Notes: Q= School quintile. Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Percentage of candidates choosing mathematics is expressed as a percentage of the full-time NSC candidates taking Mathematics or Mathematical literacy: Technical Mathematics candidates are excluded from the total. Independent schools writing the NSC and learners missing quintile data are not shown on the graph, but are included in the national pass rate.

[41] Mathematics and Physical Science subject choice declined in all quintiles over the 2019-2021 period, so this may have mitigated some of the decline in NSC achievement.

Table 5: Distribution of national Mathematics, Mathematical Literacy, Physical Science, and full-time NSC candidates by school quintile (selected years, 2008-2023)

	Mathematics				
	2008	**2013**	**2019**	**2021**	**2023**
Quintile 1-3	67%	61%	65%	70%	67%
Quintile 4	14%	14%	11%	10%	11%
Quintile 5	14%	19%	19%	16%	17%
Independent/missing	4%	6%	5%	4%	5%
Total	100%	100%	100%	100%	100%
	Mathematical Literacy				
	2008	**2013**	**2019**	**2021**	**2023**
Quintile 1-3	63%	66%	63%	70%	69%
Quintile 4	15%	15%	14%	13%	13%
Quintile 5	18%	15%	19%	15%	15%
Independent/missing	4%	5%	4%	3%	4%
Total	100%	100%	100%	100%	100%
	Physical Science				
	2008	**2013**	**2019**	**2021**	**2023**
Quintile 1-3	65%	64%	67%	72%	70%
Quintile 4	15%	14%	11%	10%	11%
Quintile 5	15%	17%	17%	14%	14%
Independent/missing	5%	5%	5%	4%	5%
Total	100%	100%	100%	100%	100%
	Full-time NSC Enrolment				
	2008	**2013**	**2019**	**2021**	**2023**
Quintile 1-3	65%	64%	64%	70%	68%
Quintile 4	15%	14%	13%	12%	13%
Quintile 5	16%	17%	19%	15%	15%
Independent/missing	4%	5%	4%	3%	4%
Total	100%	100%	100%	100%	100%

Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. It should be kept in mind that the total numbers on which the percentages are calculated vary in each year and subject, as has been shown elsewhere in this chapter.

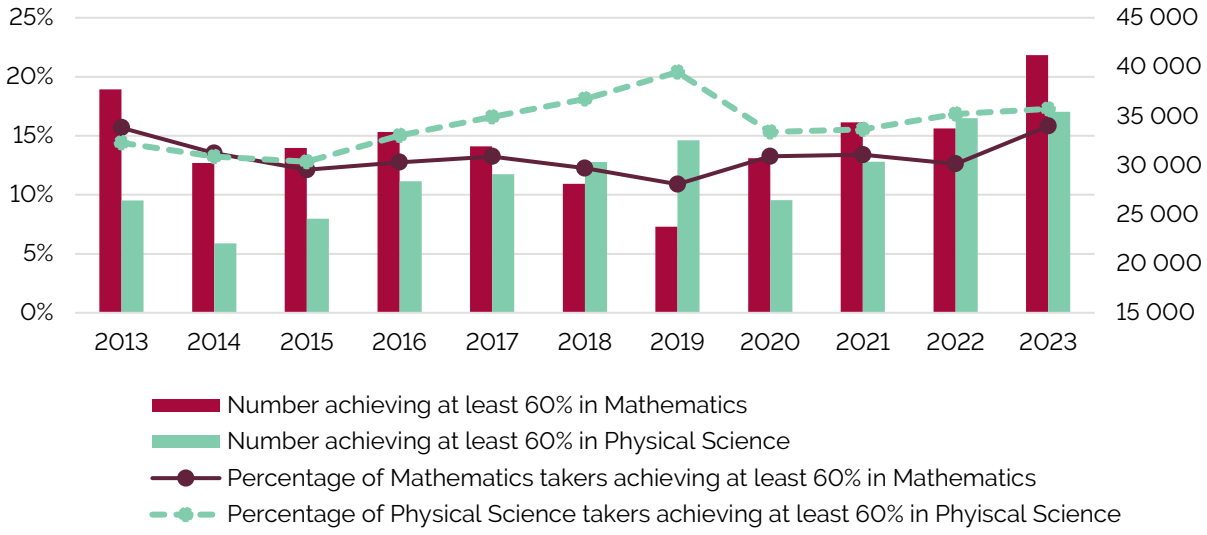
5.5 High-level passes in Mathematics and Physical Science

The minimum entry requirement for many STEM-oriented university degrees is at least 60% for Mathematics and, if applicable, Physical Science.[42] The number of youths passing these subjects with at least 60% is also one of the performance metrics highlighted in the Medium-Term Strategic Framework (MTSF) (DPME 2021, p83). For these reasons we consider 60% as our benchmark for high achievement in the NSC.

[42] For example, students must pass the National Senior Certificate or equivalent examination with at least 70% in Mathematics and 60% in Physical Science to apply for a Bachelor of Engineering degree at Stellenbosch University. At North-West University, engineering applicants require at least 70% in both subjects.

Prior to 2019, the percentage of Mathematics candidates achieving 60% or more on the NSC Mathematics examination was trending downwards. This trend saw a reversal in 2020—returning to the levels seen in 2014-2017—after which high achievement remained stable until a sharp increase in 2023 (see Figure 18). High achievement in Physical Science moved in the opposite direction to the Mathematics trends, except for 2023 where a small increase was observed in the percentage of Physical Science high achievers. [43]

Figure 18: Number and percent of Mathematics or Physical Science NSC candidates achieving 60% or more in the Mathematics or Physical Science examination, 2013-2023



Source: Anonymised learner-level NSC subject data (2013-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics.

With the fluctuations in both the number of candidates and the rates of high achievement, the absolute number of high achievers in each subject also varied greatly over time (see Figure 18 and Table 6). The year 2019 saw the fewest candidates (23,763) passing Mathematics with 60% or more, but that number climbed steadily to over 41,000 by 2023, surpassing the decade's peak of 37,726 candidates in 2013. In contrast, the number of high-achieving Physical Science candidates was at a pre-pandemic peak of 32,534 in 2019, after which it dropped by approximately 6,000 candidates in 2020 before also climbing to a decade-high peak of 35,428 high-level passes by 2023.

[43] In both subjects, similar trends to those seen for 60% achievement benchmarks are observed for A-symbol (80+%) benchmarks (see Figure A4 in the Appendix), although 2020-2023 appear to deviate from trends over 2013-2019. The year 2023 produced the highest number of Mathematics A-symbols on record, at 8,964 compared to the previous high of 8,194 in 2013 (and up from 7,304 in 2022). This was done while Physical Science A-symbols showed almost no change in numbers at 6,513 in 2023 compared to 6,556 in 2022 (and a peak of 8,127 in 2018).

Table 6: High-level achievement in Mathematics and Physical Science, 2018-2023

	Mathematics					Physical Science				
	Candidates writing Mathematics		Achieve 60% or more			Candidates writing Physical Science		Achieve 60% or more		
	Number	% of all NSC	Number	% of Math. Writers	% of all NSC full-time	Number	% of all NSC	Number	% of Phy. Sci. takers	% of all NSC full-time
2018	229,355	45.6%	28,118	12.3%	5.5%	167,344	32.6%	30,320	18.1%	5.9%
2019	218,081	44.1%	23,763	10.9%	4.7%	159,549	31.6%	32,534	20.4%	6.5%
2020	231,517	40.8%	30,706	13.3%	5.3%	172,547	29.8%	26,447	15.3%	4.6%
2021	256,833	37.2%	34,380	13.4%	4.9%	195,467	27.8%	30,369	15.5%	4.3%
2022	267,442	37.6%	33,733	12.6%	4.7%	206,511	28.5%	34,785	16.8%	4.8%
2023	260,526	38.5%	41,211	15.8%	6.0%	204,948	29.7%	35,428	17.3%	5.1%

Source: Anonymised learner-level NSC subject data (2018-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. 'All NSC' refers to all full-time NSC candidates, not just to candidates writing the specified subject.

With these numbers, the MTSF's 2024 goal of 35,000 candidates achieving at least 60% in each of Mathematics and Physical Science was already reached in 2023. While this is a commendable achievement, particularly in light of the pandemic, this goal still appears to be too low to meet university demand, especially for Mathematics (see DBE 2024b). Overall, high achievement in Mathematics also remains low—at just 6% of all full-time NSC candidates in 2023, an extraordinarily high-performing year. But higher candidate numbers post-pandemic may present an opportunity to attain more high-achieving Mathematics and Physical Science passes and better meet university demand for these subjects.

A caution to this is that there are no obvious observed compositional changes that explain the improvement in high-level Mathematics achievement between 2022 and 2023, nor the improvement in Physical Science achievement between 2021 and 2023. Although relatively fewer learners chose these subjects, which could suggest more selective subject choice, other indicators already discussed would not have predicted such large increases in the numbers and relative rates of high achievement in pandemic years.

If the improvements were the consequence of long-term interventions or temporary COVID-related interventions, this is important to know, so that similarly effective interventions can be implemented to benefit the post-pandemic NSC cohorts. But if

improvements were the result of issues in mark standardisation or greater leniency[44], this should be identified and addressed[45].

5.5.1 Trends in high-level passes by school Quintile

Over the long-term, the share of NSC Mathematics candidates from Quintile 1 to 3 schools has stayed within a relatively narrow (60-70%) range, but there has been a substantial improvement in the relative number of high achievers produced by these schools (see Figure 19). In 2008, just 27% of South Africa's high-level Mathematics passes came from Quintile 1 to 3 schools, but this had risen to 46% by 2021 and to 50% in 2023. Similar gains were also made in Physical Science and Mathematical Literacy (see Appendix Figure A5 and Figure A6).

In 2008, just 27% of South Africa's high-level Mathematics passes came from Quintile 1 to 3 schools, but this had risen to 46% by 2021 and to 50% in 2023.

Candidates from Quintile 1 to 3 schools are still underrepresented in the country's high-level passes in these three subjects, but the large equity improvements over the 2008-2023 period are nevertheless encouraging. Much of the reduced inequality prior to 2019 aligns with expectations, but the gains made between 2019 and 2023 are largely unexpected[46] and unexplored.

If the improved shares of high-level passes coming from Quintile 1 to 3 schools during the pandemic reflect true academic improvement—perhaps the result of pandemic-related catch-up programmes, spillover effects from subject choice and accelerated learner flows,[47] or educational quality improvements reflected, for example, in TIMSS results in earlier grades (DBE 2024c)—understanding the reasons for the improvement could bring

[44] Unintentional leniency could be introduced into standardisation processes if changes in the NSC population were not properly incorporated, and cohorts during the pandemic were assumed to have had similar academic abilities (and performance distributions) to pre-pandemic NSC cohorts. Not enough information about the statistical standardisation process is publicly available to know if the abnormal flows to matric (and the removal of the MEO) were incorporated when the 2020-2023 results were standardised.

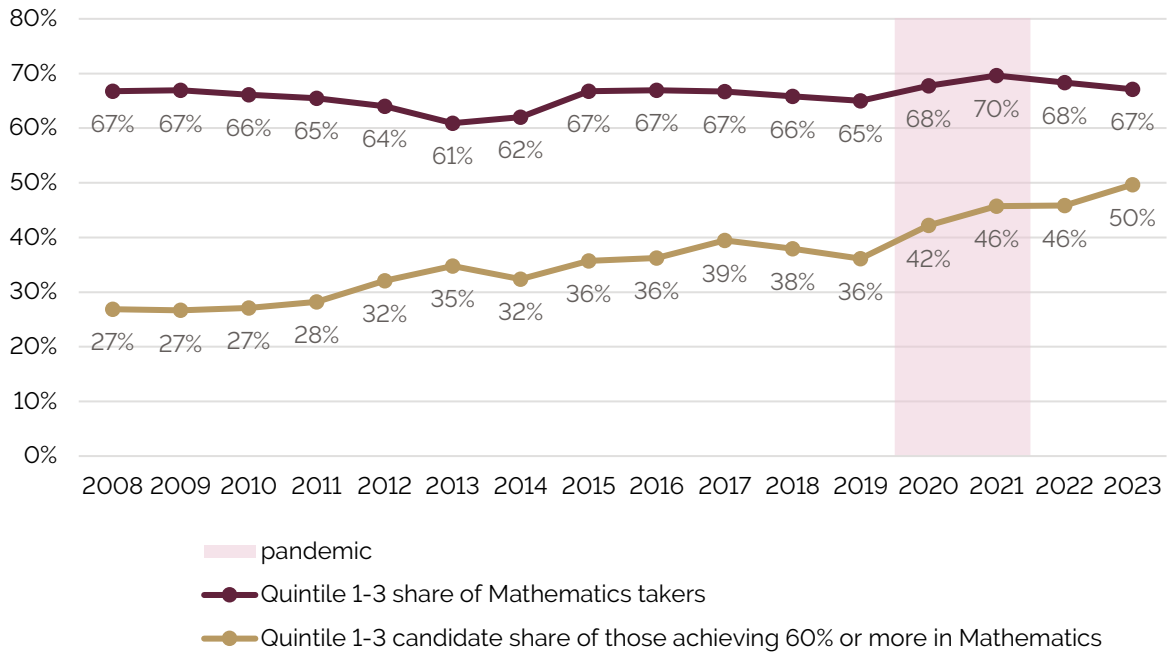
[45] Standards could gradually deteriorate over time if marks are not adjusted for academically weaker cohorts, but it is also possible that academically stronger cohorts might be penalised through downward mark adjustments if their achievement is standardised according to weaker cohorts' achievement distributions.

[46] The substantial improvements in poorer schools' shares of high-level passes over the 2019-2023 period should be studied further, since these schools would have been expected to be most impacted by COVID-19 disruptions, the MEO's removal, and the accelerated flows during the pandemic. However, preliminary TIMSS results reflect improvements in poorer Quintiles' Grade 9 Mathematics between 2019 and 2023 (DBE 2024c; Reddy et al. 2020), so further analysis is needed to determine how much this may have contributed to high-achievement in the NSC.

[47] For example, lower choice of Mathematics could result in smaller and academically stronger Mathematics classes, which may facilitate high achievement, while lower repetition rates could reduce class sizes in earlier grades and allow for stronger foundational Mathematics knowledge to be built prior to matric.

to light effective interventions that can be used to sustain and build upon achievement successes in Quintile 1 to 3 schools.

Figure 19: Quintile 1-3 share of all candidates i) writing NSC Mathematics and ii) Quintile 1-3 share of all candidates writing NSC Mathematics achieving 60% or more, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). Notes: Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. The remaining share of candidates are from Quintile 4, 5 and Independent schools or schools without any identified Quintile status.

6 SUMMARY AND CONCLUSION

In summarising the findings presented in this chapter, we revisit the research questions introduced earlier:

- By how much has school completion increased since the introduction of the NSC in 2008, and how much did the pandemic affect school completion?
- In what ways did NSC cohorts differ in pandemic years relative to previous years, and did expected achievement patterns hold?
- Since the introduction of the NSC in 2008, to what extent have inequalities in NSC results changed over time?
- How many high-level passes in Mathematics and Science are being achieved and to what extent are poorer (Quintile 1-3) schools contributing to this?

In answering the first research question, we show that school completion rates have increased significantly. Between 2008 and 2023, the matric completion rate—proxied by the number of NSC passes as proportion of Grade 2 enrolment (a pseudo cohort) 10 years

prior—has risen by about 1.6 times, while the overall school completion rate for youth increased by a factor of 1.3, from 48% in 2010 to 64% in 2024. These increases in school completion in recent years have brought South Africa's school completion rates to a level that is high and comparable to other middle-income countries (Department of Basic Education (DBE) 2024b).

It appears that pandemic-related changes played a significant role in accelerating school completion. The number of NSC passes achieved during the four years 2020-2023 surpassed the total number from the previous five years (2015-2019), while more bachelor passes were achieved during the four years 2020-2023 than in the preceding six-year period (2014-2019).

Reflecting on the second research question, we highlight the notable growth in the number of NSC candidates, number of NSC passes, and number of NSC bachelor passes across all provinces over 2019-2023. This growth was far higher than any earlier time periods, such as 2008-2014 or 2014-2019. The sharp increase in matric candidate numbers from 2021 to 2023 can largely be attributed to three factors: demographic changes, increased learner flows, and the removal of the Multiple Examination Opportunity (MEO). We discussed how these factors may influence NSC achievement and argue that the 2020-2023 NSC cohorts were likely to be academically weaker than pre-pandemic cohorts, which does not align with buoyant and then improved NSC pass and bachelor pass rates in those years. Further research is needed to identify if educational progress pre-pandemic may have concurrently raised the underlying competence of matric cohorts (Gustafsson 2023; DBE 2024c).

We then examined the composition of the matric cohort in terms of age, gender, and subject choice, to see if differences in observable characteristics can explain the better-than-expected NSC achievement post-2019. For the 2020-2021 period, we find a deterioration in most factors associated with higher achievement, which highlights the need for more scrutiny of 2021 NSC results, as will be discussed in chapter 3. Yet we also show that improved age profiles among the 2022 and 2023 NSC cohorts—along with a movement away from more challenging subjects such as Mathematics and Physical Science—may have strengthened NSC achievement in those years. The large shifts in the age profiles of recent NSC cohorts, as well as pro-female changes in achievement patterns are both unexpected and require further research to understand.

The third research question of this chapter aimed to explore inequalities in NSC results, which we did by comparing NSC pass and bachelor pass rates and candidate numbers across school quintiles. We found that significant equity gains have been made over the 2008-2023 period—for example, the achievement gap in NSC pass rates between Quintile 1 and Quintile 5 schools declined almost five-fold between 2008 and 2023. Any negative pandemic impact on poorer schools has not persisted post-pandemic. Not only did poorer schools recover from any adverse pandemic impacts, but gaps in NSC pass and bachelor pass rates between poorer (Quintile 1 to 3) and richer (Quintile 5) schools were at their lowest ever levels in 2023.

To address the fourth research question, we show that the number of high-level passes in both Mathematics and Physical Science reached their peak—and surpassed the MTSF's 2024 goal of 35,000 high-level passes—in 2023. For Mathematics, this represented gradual increases between 2019 and 2023, while for Physical Science the number and rates of high achievers declined steeply between 2019 and 2020 before recovering over the next few years.

Large equity gains were made in high-level passes, with Quintile 1 to 3 schools growing their share of the country's high-level Mathematics passes from 27% in 2008 to 50% by 2023. Much of this improvement occurred during 2019-2023, which is surprising and requires further research. If the gains were truly reflective of improved academic outcomes, they could provide valuable insight into how achievement gaps between wealthier and poorer schools can be closed even further.

Overall, our research demonstrates the complexity of interpreting NSC results, and the numerous factors that may influence achievement. Many questions about the 2020-2023 NSC results remain and cannot be addressed through descriptive analysis alone, but even multivariate analysis (as discussed in chapter 3) has its limitations. Nevertheless, the NSC experienced unprecedented changes during the pandemic period, with impacts that extend beyond basic education itself.

With higher survival to Grade 12 and many additional NSC and bachelor passes being produced, what are the implications of this for the post-school education and training (PSET) system and the labour market? Universities may not be fully impacted by these changes, since many of the additional passes and bachelor passes do not reach 60% benchmarks in key subjects. Yet it remains to be seen how the demand for Technical Vocational Education and Training (TVET) colleges will be affected.

As will be discussed in chapters 4 and 5 of this compilation, the tertiary system has not expanded sufficiently to cope with the unexpected surge in school leavers. The labour market, too, has struggled to absorb the new matriculants. The higher numbers of matriculants entering the labour market may also affect the economic returns to a matric. Understanding the implications of a rising supply of matriculants for the labour market, may help in managing youth expectations regarding wages and employment opportunities, especially if school completion rates continue to rise.

Despite South Africa's improving school completion rates, challenges remain in addressing the country's skills shortages, especially in key subjects like Mathematics and Physical Science. To address these challenges, improvements are needed not only in the quality of education from the foundational years, but also in subject selection at higher grades, which could increase the number of high-achieving students in critical subjects.

Finally, it is crucial to maintain the integrity and credibility of the NSC examination process. It is important to know and understand the limitations of the statistical standardisation process in situations like the pandemic, where substantial changes to the NSC population and its academic ability distribution occurred. Addressing these limitations will aid in the

comparability of NSC results across years and will help to preserve the qualification's value in both the labour market and in higher education.

7 REFERENCES

Ardington, C., Wills, G. & Kotze, J. 2021. COVID-19 learning losses: Early grade reading in South Africa. *International Journal of Educational Development*, 86(2021), 102480.

Böhmer, B. & Wills, G. 2023. COVID-19 and inequality in reading outcomes in South Africa: PIRLS 2016 and 2021. COVID-Generation RESEP working paper. Stellenbosch: Stellenbosch University.

Branson, N., De Lannoy, A. & Kahn, A., 2019. Exploring the transitions and well-being of young people who leave school before completing secondary education in South Africa. Saldru Working Paper 244 / NIDS Discussion Paper 2019/11. University of Cape Town.

Branson, N., Culligan, S. & Ingle, K. 2020. Developing Siyaphambili: A stronger South Africa Nation Website. Moving towards a unified goal to combat inequality and unemployment. SALDRU report 20/01. Cape Town: SALDRU, UCT.

Branson, N. and Lam, D. 2021. 'The Economics of Education in South Africa,' In A. Oqubay, F. Tregenna, and I. Valodia (eds), *The Oxford Handbook of the South African Economy*. Oxford Academic.

Department of Basic Education, 2009. National Examinations and Assessment. Report on the National Senior Certificate Examination Results 2009. Pretoria: Department of Basic Education.

Department of Basic Education. 2012. National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12, published as Government Notices No. 1115 and 1116 in Government Gazette No. 36042. Pretoria: Department of Basic Education.

Department of Basic Education. 2013. Report on progress in the schooling sector against key indicators. Pretoria: Department of Basic Education.

Department of Basic Education. 2015. Circular E35 of 2015. Criteria for the implementation of progression in grades 10 to 12. Pretoria: Department of Basic Education.

Department of Basic Education. 2016a. Report on progress in the schooling sector against key learner performance and attainment indicators. Report prepared by Gustafsson, M. Pretoria: Department of Basic Education

Department of Basic Education. 2016b. Guideline for the implementation of promotion and progression requirements for Grades 10-11. Pretoria: Department of Basic Education.

Department of Basic Education. 2018. Circular S8 of 2018. Revocation of designated list of subjects for the National Senior Certificate. Pretoria: Department of Basic Education.

Department of Basic Education. 2022a. The COVID-19 pandemic, enrolments, dropping out and attendance explained. Report prepared by Gustafsson, M. Pretoria: Department of Basic Education.

Department of Basic Education. 2022. National Senior Certificate 2021 Examination Report. Pretoria: Department of Basic Education.

Department of Basic Education. 2023a. National Senior Certificate 2022 Examination Report. Pretoria: Department of Basic Education.

Department of Basic Education. 2023b. Grade promotion, repetition and dropping out 2018 to 2021 (Data Report). Pretoria: Department of Basic Education. [https://www.education.gov.za/LinkClick.aspx?fileticket=llofwGUQtBo%3d&tabid=92&portalid=0&mid=4362]

Department of Basic Education. 2024a. National Senior Certificate 2023 Examination Report. Pretoria: Department of Basic Education.

Department of Basic Education (DBE) 2024b. Review of progress in the basic education sector to 2024. Analysis of key statistics. Pretoria: Department of Basic Education.

Department of Basic Education (DBE) 2024c. South African 2023 Trends in International Mathematics and Science Study (TIMSS) Highlights Report. Pretoria: Department of Basic Education. Department of Planning, Monitoring and Evaluation. 2021. Revised medium term strategic framework: 2019-2024. Pretoria: Department of Planning, Monitoring and Evaluation.

Gustafsson, M. 2018. Understanding the sharp primary level enrolment increases beginning in 2011. Stellenbosch Economic Working Papers 08/2018. Stellenbosch: Stellenbosch University.

Gustafsson, M. 2020. A revised PIRLS 2011 to 2016 trend for South Africa and the importance of analysing the underlying microdata (Working Paper WP02/2020; Stellenbosch Economic Working Papers). University of Stellenbosch. www.ekon.sun.ac.za/wpapers/2020/wp022020

Gustafsson, M. & Nuga-Deliwe, C. 2020. How is the COVID-19 pandemic affecting educational quality in South Africa? Evidence to date and future risks. Stellenbosch Economic Working Paper Series: WP23/2020. Stellenbosch.

Gustafsson, M. 2022. The COVID-19 pandemic, enrolment, dropping out and attendance explained. Pretoria: Department of Basic Education.

Gustafsson, M. 2023. Trends in targets with respect to NSC results permitting entry into mathematically oriented programmes at a university. Report produced for the Department of Basic Education. Unpublished.

Hoadley, U. 2023. COVID-19 and the South African Curriculum Policy Response. RESEP Research Note. Stellenbosch: Stellenbosch University.

Hunt, K., Ntuli, M., Rankin, N., Schoer, V. & Sebastiao, C. (2011) Comparability of NSC mathematics scores and former SC mathematics scores: How consistent is the signal across time? *Education as Change* 15(1), doi.org/10.1080/16823206.2011.574097

Kika, J., & Kotze, J. 2018. Unpacking Grade Repetition Patterns in Light of the Progression Policy in the Further Education and Training Phase. Pretoria: Department of Basic Education.

Kotze, J., Wills, G., Ardington, C., Taylor, S., Mohohlwane, N. & Nuga-Deliwe, C. 2022. Background Advisory Note to the 2030 Reading Panel: Learning losses due to the COVID-pandemic. Pretoria: Department of Basic Education.

Moses, E., van der Berg, S. & Rich, K. 2017. A society divided: How unequal education quality limits social mobility in South Africa. Synthesis report for the Programme to Support Pro-Poor Policy Development (PSPPD). Stellenbosch: Research on Socio-Economic Policy, Stellenbosch University.

Parliament. 2019. Written reply to question 852 of the National Assembly. Internal question paper 14/2019. 6 September 2019. Available at: https://press-admin.voteda.org/wp-content/uploads/2019/10/n_marchesi-PQ.pdf (Accessed 22 January 2024).

Parliament. 2020. Written reply to question 3042 of the National Assembly. Internal question paper 51/2020. 4 December 2020. Available at: https://pmg.org.za/committee-question/13667/ (Accessed 22 January 2024).

Reddy, V., Winnaar, L., Juan, A., Arends, F., Harvey, J., Hannan, S., Namome, C., Sekhelane, P. & Zulu, N. 2020. TIMSS 2019: Highlights of South African Grade 9 results in mathematics and science. Achievement and achievement gaps. Pretoria: Department of Basic Education.

Roberts, N. 2020. Matric: Scrap the 30% pass mark! It's (not) a joke. Available: Daily Maverick, 9 January 2020. Available at: https://www.dailymaverick.co.za/article/2020-01-09-matric-scrap-the-30-pass-mark-its-not-a-joke/ (Accessed 30 November 2024).

Roberts, N. 2020. The 30% matric pass mark: To increase or to scrap, and why all the excitable commentary? Daily Maverick, 12 January 2022. Available at: https://www.dailymaverick.co.za/article/2022-01-12-the-30-matric-pass-mark-to-increase-or-to-scrap-and-why-all-the-excitable-commentary/ (Accessed 30 November 2024).

SAQA, 2024. Frequently Asked Questions. Available at: https://www.saqa.org.za/frequently-asked-questions/ (Accessed 30 November 2024).

Selkirk, R. Forthcoming. Grade repetition in South Africa: impacts on achievement, flows, and school completion. Unpublished Thesis. Stellenbosch: Stellenbosch University.

Spaull, N. & Makaluza, N. 2019. Girls Do Better: The pro-female gender gap in learning outcomes in South Africa 1995-2018. *Agenda* 33(4). p 207-224.

Umalusi, 2024. Umalusi approval statement for 2023 year-end examination results. Available: https://www.gov.za/news/speeches/umalusi-approval-statement-2023-year-end-examination-results#:~:text=A%20total%20of%2015%20186,No%20subject%20was%20adjusted%20downward.

UNESCO, 2022. High-stakes exams and assessments during the COVID-19 crisis : what is the status at the end of the 2020-2021 school year? Working papers on education policy, 11. Paris: UNESCO.

Van der Berg, S., Hoadley, U., Galant, J., van Wyk, C. & Böhmer, B. 2022. Learning Losses from COVID-19 in the Western Cape. Evidence from Systemic Tests. RESEP Research Report. Stellenbosch: Stellenbosch University.

Van der Berg, S., Van Wyk, C., Gustafsson, M., Meyer, H., Chari, A., Van Biljon, C., Lilenstein, A., Selkirk, R. & McCallum, J. 2023. What rich new education data can tell us. RESEP Research Report. Stellenbosch: Stellenbosch University.

Van der Berg, S. & Böhmer, B. 2025. South Africa: COVID-19 Learning Losses and Attempts at Recovery in a Poorly Performing and Unequal Education System. In: N. Crato, & A. Patrinos (eds) Improving National Education Systems After COVID-19 (pp.153-169)

Varghese, R. 2024 What is the NSC Pass? Exploring the Different Pass Types and their Benefits. Regenesys website. Available: https://www.regenesys.net/reginsights/what-is-nsc-pass#:~:text=The%20NSC%20offers%20various%20pass,Bachelor's%20Pass%20for%20university%20degrees.

Wedekind, V. 2013. NSC Pass Requirements. A discussion document for Umalusi on the NSC Pass mark. Pretoria: Umalusi. Available: https://www.umalusi.org.za/docs/research/2013/nsc_pass.pdf

Whitelaw, E. & Branson, N. 2024. Assessment matters: What can we understand about National Senior Certificate results during COVID-19 from university entrance exams? COVID-Generation RESEP note. Stellenbosch: Stellenbosch University.

Wills, G. & Qvist, J. 2023. Repetition and dropout in South Africa before, during and after COVID-19. COVID-Generation RESEP Research Report. Stellenbosch: Stellenbosch University.

Wills, G., & Van der Berg, S. 2024. COVID-19 disruptions and education in South Africa: Two years of evidence. *Development Southern Africa*, 41(2), p446–465. https://doi.org/10.1080/0376835X.2024.2311711

Yu, D. & Adams, C. 2022. Labour market trends in South Africa in 2009-2019: A lost decade? Stellenbosch Economic Working Papers: WP03/2022. Stellenbosch: Stellenbosch University.

8 APPENDIX

Table A 1: Percent of youth with a completed secondary using varying age samples and quarters of the QLFS, maximum-method, 2010-2024

Year	Qmixed	Q1	Q2	Q1	Q1	Q1	Q1	Average
Age range	17-30	20-28	20-28	19-28	18-30	17-34	15-34	
2010	49.1	47.2	45.6	46.2	47.3	49.2	50.6	47.9
2011	50.4	47.6	48.4	48.1	48.7	50.2	51.2	49.2
2012	51.7	47.2	48.6	48.1	49.1	50.6	51.6	49.5
2013	53.2	48.8	50.2	50.1	51.3	52.2	52.7	51.2
2014	54.3	50.7	51.0	51.9	53.2	54.2	54.7	52.9
2015	53.6	49.7	51.7	50.1	51.0	52.4	53.3	51.7
2016	53.2	51.5	50.9	51.8	52.3	53.2	54.0	52.4
2017	55.0	51.7	52.0	52.1	52.8	53.5	54.5	53.1
2018	56.8	53.9	53.6	54.2	55.2	55.6	56.7	55.1
2019	57.9	54.8	54.4	55.9	56.2	56.3	57.4	56.1
2020	61.7	56.5	58.6	56.9	57.8	57.9	59.2	58.4
2021	62.3	60.8	58.5	62.0	63.0	62.5	62.8	61.7
2022	63.5	58.2	58.2	58.8	60.3	60.8	62.4	60.3
2023	64.2	60.9	59.6	61.3	62.7	63.3	64.3	62.3
2024	65.4	60.7	N/A	61.6	63.2	64.1	65.6	63.5

Source: QLFS, own calculations. Q = quarter. Qmixed uses the following quarters: Quarter 1 & 2 of 2010-2013, quarter 1-4 of 2014 to 2023, quarter 1 of 2024. The maximum approach is used. Numbers represent percentages.

Table A 2: Statistics on Multiple Examination Opportunity (MEO) candidates writing in November 2018/June 2019 by province

Province	Entered	Wrote	Percent writing	MEO writers as percent of full-time writers (Nov 2018)	Passed	Pass rate (MEO)	Pass rate (full-time, 2018)
EC	12,848	9,822	76.4%	14.9%	414	4.2%	70.6%
FS	3,130	3,124	99.8%	12.6%	395	12.6%	87.5%
GP	10,064	9,866	98.0%	10.4%	1,053	10.7%	87.9%
KZ	30,705	25,112	81.8%	21.6%	2,126	8.5%	76.2%
LP	16,899	16,848	99.7%	22.0%	1,105	6.6%	69.4%
MP	6,470	6,424	99.3%	14.4%	677	10.5%	79.0%
NC	5,164	5,102	98.8%	17.6%	438	8.6%	81.1%
NW	2,085	2,065	99.0%	20.8%	113	5.5%	73.3%
WC	1,463	1,458	99.7%	2.9%	33	2.3%	81.5%
National	**88,828**	**79,821**	**89.9%**	**15.6%**	**6,354**	**8.0%**	**78.2%**

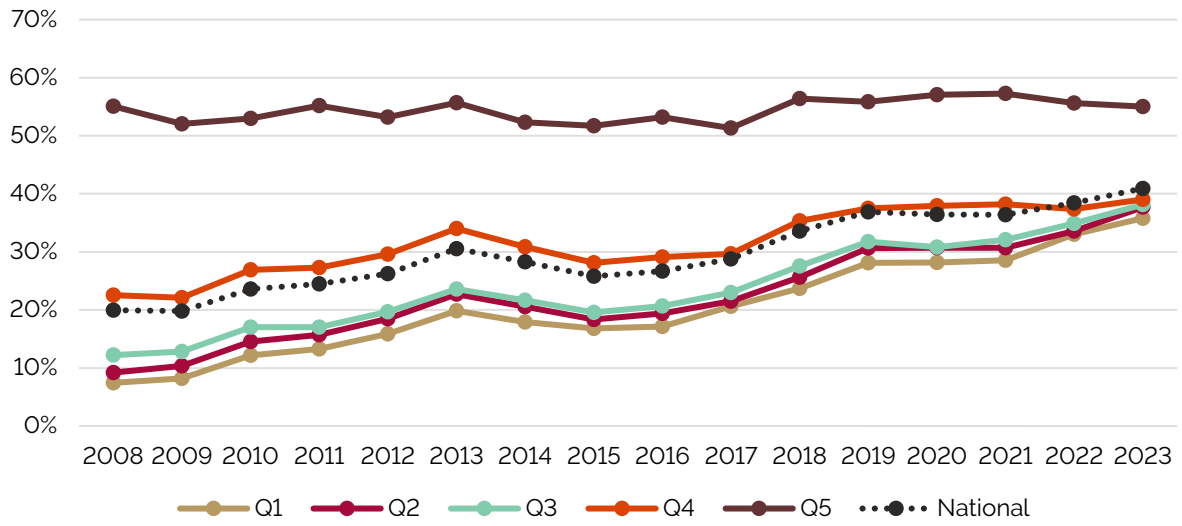
Source: Own calculations using numbers reported in Parliament (2019; 2020). Full-time pass rates are calculated using anonymised learner-level NSC subject data (2013-2021). 2018 full-time NSC pass rates are used for comparison because in years where no MEO was available, candidates would form part of the earlier year's full-time examination. A provincial breakdown for progressed learners is not available, but the national pass rate for progressed learners writing as full-time candidates was 60.2% in 2018.

Table A 3: Percent of candidates in each overage status group, 2013-2023

Years overage	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
0 (or underage)	47.7%	47.8%	42.6%	45.0%	50.1%	52.5%	53.3%	49.9%	47.0%	52.9%	56.4%
1 year	22.4%	21.9%	21.9%	22.1%	20.9%	21.2%	21.8%	22.1%	21.7%	20.9%	21.2%
2 years	13.3%	14.1%	15.0%	14.7%	13.4%	12.3%	12.3%	13.6%	14.3%	12.6%	10.9%
3+ years	16.7%	16.1%	20.5%	18.2%	15.5%	14.1%	12.6%	14.5%	17.0%	13.5%	11.4%

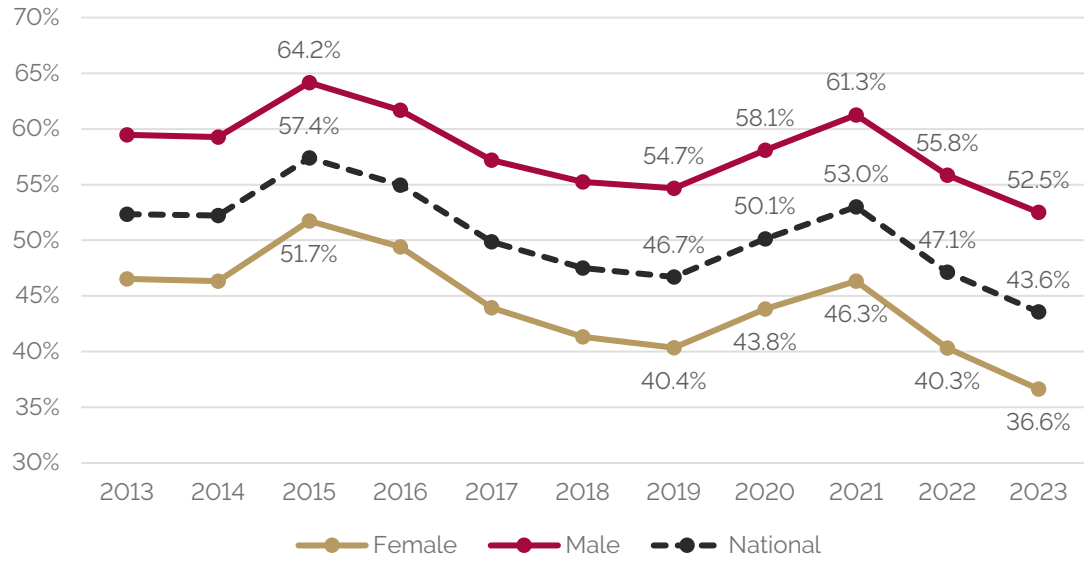
Source: Anonymised learner-level NSC subject data (2013-2023). Only full-time candidates with six or more written subjects and a non-missing pass status and age are included, and numbers may differ slightly from officially reported statistics. 'Overage' refers to candidates 19 years or older in December of the year in which they wrote the NSC examination.

Figure A1: NSC bachelor pass rates by quintile, 2008-2023



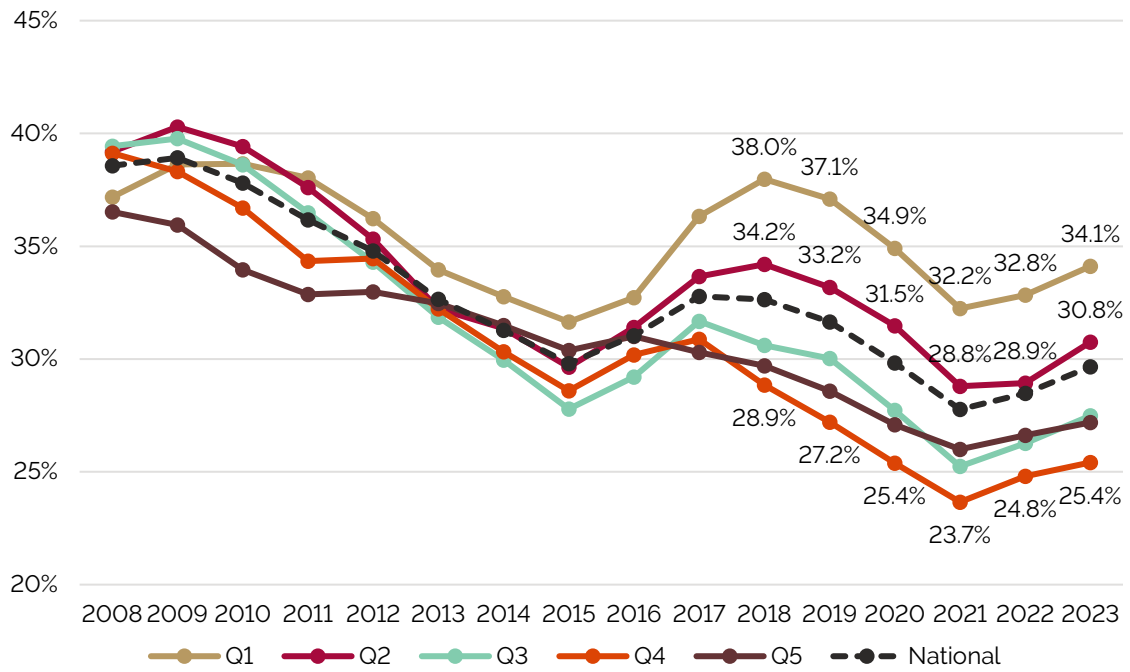
Source: Anonymised learner-level NSC subject data (2008-2023). Q= School quintile. Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Independent schools writing the NSC and learners missing quintile data are not shown on the graph, but are included in the national pass rate. The y-axis does not start at 0%.

Figure A2: Percent of overage full-time NSC candidates by gender, 2008-2023



Source: Anonymised learner-level NSC subject data (2013-2023). Only full-time candidates with six or more written subjects and a non-missing pass status and age are included, and numbers may differ slightly from officially reported statistics. 'Overage' refers to candidates 19 years or older in December of the year in which they wrote the NSC examination. Results for 2008-2012 are not shown due to high levels of missing data on age.

Figure A3: Percent of candidates in each quintile writing the NSC Physical Science examination, 2008-2023



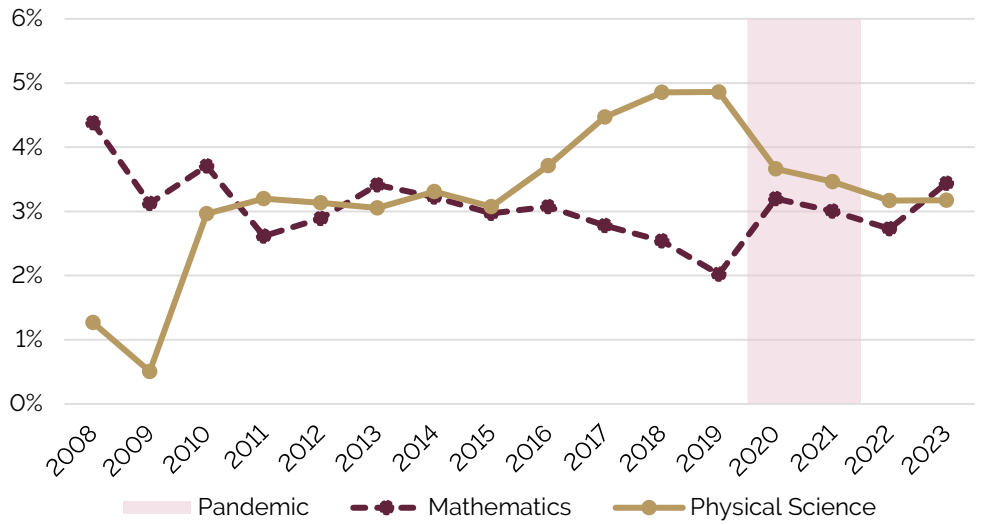
Source: Anonymised learner-level NSC subject data (2008-2023). Q= School quintile. Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Percentage of candidates choosing Physical Science is expressed as a percentage of full-time NSC candidates. Independent schools writing the NSC and learners missing quintile data are not shown on the graph, but are included in the national pass rate. The y-axis does not start at 0%.

Table A 4: Share of national candidates writing the NSC Mathematical Literacy examination by school quintile, selected years, 2008-2023

	Share of candidates writing Mathematical Literacy by school Quintile						
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Independent /missing	**Total**
2008	19%	22%	23%	15%	18%	4%	**100%**
2013	19%	22%	24%	15%	15%	5%	**100%**
2019	19%	21%	24%	14%	19%	4%	**100%**
2021	21%	23%	26%	13%	15%	3%	**100%**
2023	21%	22%	26%	13%	15%	4%	**100%**
	Share of candidates writing Physical Science by school Quintile						
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Independent /missing	**Total**
2008	18%	23%	24%	15%	15%	5%	**100%**
2013	20%	21%	23%	14%	17%	5%	**100%**
2019	24%	22%	21%	11%	17%	5%	**100%**
2021	26%	23%	23%	10%	14%	4%	**100%**
2023	25%	22%	23%	11%	14%	5%	**100%**

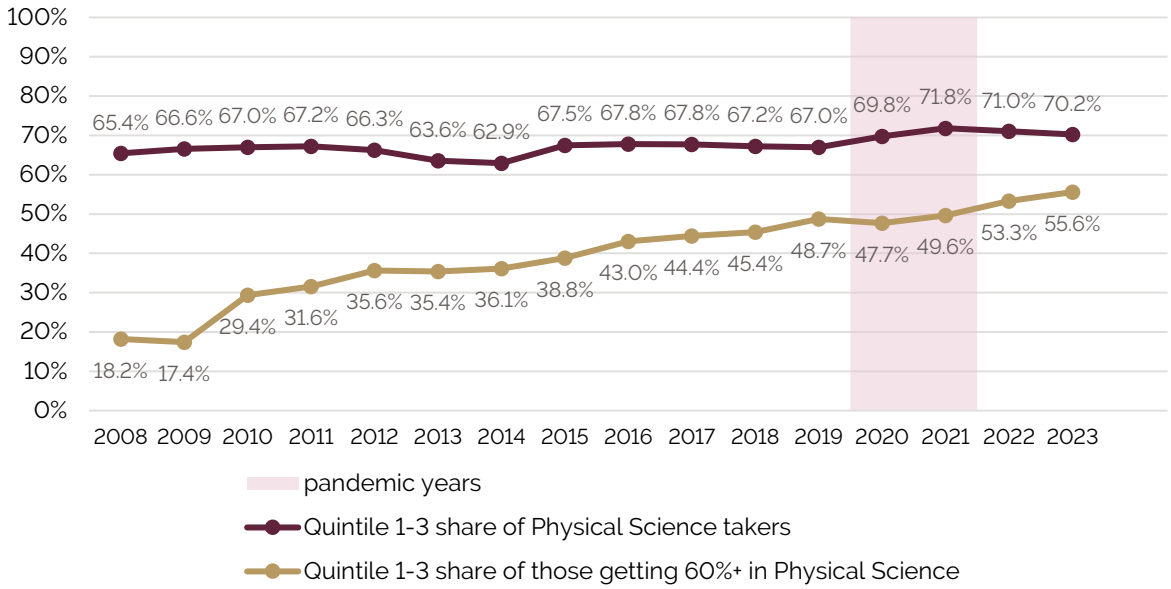
Source: Anonymised learner-level NSC subject data (2008-2023). Notes: Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Independent/missing refers to schools with a quintile value that does not range from 1-5. Percentages may not sum to 100% due to rounding.

Figure A4: Percent of Mathematics/Physical Science candidates achieving an A-symbol (80% or more), 2008-2023



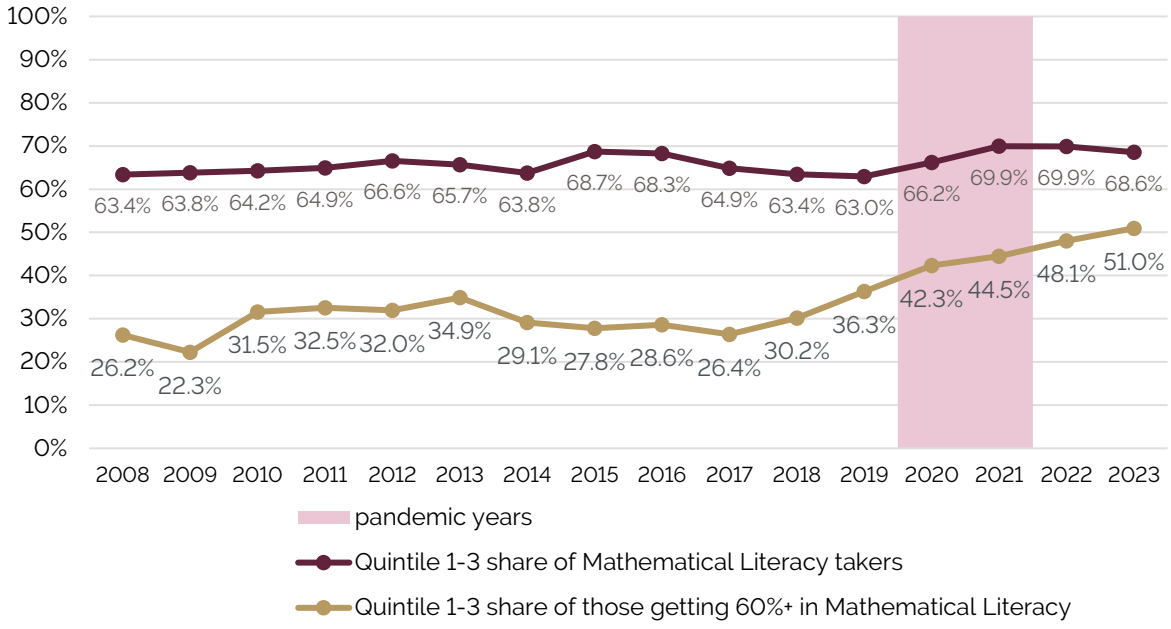
Source: Anonymised learner-level NSC subject data (2008-2023). Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. The percentages shown here are expressed as a percentage of candidates writing the relevant examination, not as a percentage of all candidates writing the NSC.

Figure A5: Quintile 1-3 share of all candidates i) writing NSC Physical Science and ii) Quintile 1-3 share of all candidates writing Physical Science achieving 60% or more, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). Notes: Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Independent/missing refers to schools with a quintile value that does not range from 1-5.

Figure A6: Quintile 1-3 share of all candidates i) writing NSC Mathematical Literacy and ii) Quintile 1-3 share of all candidates writing NSC Mathematical Literacy achieving 60% or more, 2008-2023



Source: Anonymised learner-level NSC subject data (2008-2023). Notes: Only full-time candidates with six or more written subjects and a non-missing pass status are included, and numbers may differ slightly from officially reported statistics. Independent/missing refers to schools with a quintile value that does not range from 1-5.

3 The consistency of the matric and its signalling ability

A review of the evidence

Gabrielle Wills

ABSTRACT

This chapter reviews existing evidence, exploring three aspects of the National Senior Certificate (NSC) or 'matric' in South Africa: the comparability of NSC results overtime and the extent to which quality assurance processes support consistency; the possibility of grade inflation during the pandemic; and the signalling power of the NSC. First, the chapter reflects on the processes in place to maintain consistency in NSC results from year to year, with a focus on Umalusi's quality assurance systems. These efforts are found to be commendable, but limitations remain in achieving statistical standardisation due to the lack of common items across exams from year to year. This finding is further developed in exploring the possibilities of grade inflation in NSC results during the pandemic drawing on three existing studies. While inflation in the NSC pass rate in 2020 is not implied by available evidence, NSC pass rate inflation in 2021 is suggested but likely abated in 2022. Evidence of grade inflation in NSC Mathematics results during the pandemic is mixed. One study suggests that the difficulty of achieving a Mathematics mark over 50% continued to increase into the pandemic years, while a more methodologically robust study hints at grade inflation across the distribution of NSC Mathematics results in 2021 and to a lesser extent 2022, particularly in no-fee schools. Lastly, the chapter reviews the NSC's usefulness as a signal of ability, specifically its ability to predict academic success at university and the extent to which the NSC is rewarded in the labour market. Despite inconsistencies in standardisation that may occur, the NSC remains a significant predictor of success at university although other unobserved factors may matter more. Furthermore, while returns to a matric are declining, it still provides a notable advantage in the labour market over an incomplete secondary education. Ongoing analysis of this important qualification, especially in relation to standardised assessments such as the National Benchmark Tests, should be further encouraged to promote continued transparency and better understanding of trends in NSC results and subject difficulty.

1 INTRODUCTION

South Africa's National Senior Certificate (NSC), commonly referred to as the 'matric', is a gateway to higher education, with its results determining admissions into universities and other post-school education and training institutions. Even for those who pursue tertiary qualifications, proof of completing the NSC—or an equivalent certificate—is often required by employers well into adulthood. Beyond its academic significance, the release of NSC results is a major annual event in South Africa, garnering public and media attention as a barometer of the country's education system, despite a large, but shrinking, portion of school-goers never reaching Grade 12.

NSC results are not only vital for higher education access but also serve as a measure of the nation's human capital potential, particularly in critical subjects like Mathematics and Physical Science. Holding a matric certificate has historically been a key determinant in the labour market, increasing the likelihood of employment and potential earnings compared to not having a matric (Salisbury 2016; Köhler 2024; Yu & Adams 2022). Maintaining high standards and consistency in the NSC is thus crucial for a well-functioning education and training system in South Africa.

Given the high stakes surrounding the NSC, its consistency and signalling power is frequently debated in public discourse, media reports, and academic discussions (Hunt et al. 2011; Rankin et al 2012). From one year to the next, students often argue over the difficulty of exam papers, while university lecturers may notice differences in the preparedness of first-year students with similar NSC results to those from previous years.

As detailed in chapter 2, the COVID-19 pandemic amplified these debates. Despite substantial learning losses in earlier grades (Ardington et al., 2021; Van der Berg et al., 2022; Böhmer & Wills, 2023), the impact on NSC pass rates and bachelor pass rates appeared less severe than expected, particularly in 2021. The pass rate for full-time candidates, for instance, dipped slightly from 81.3% in 2019 to 76.2% and 76.4% in 2020 and 2021, before recovering to 80.1% in 2022 and reaching a historical high of 82.9% by 2023 (see Figure 7 in chapter 2). The full-time candidate bachelor pass rate in 2019 of 36.9% remained almost unaffected in 2020 at 36.4% before climbing to an historical high of 40.9% in 2023. These relatively buoyant NSC results contradicted model expectations in the early stages of the pandemic (Gustafsson & Nuga Deliwe 2020).

While some might interpret relatively limited declines during the pandemic as evidence of either easier examinations or more lenient marking, assessing changes in NSC performance from year to year is far from straightforward (Selkirk forthcoming). As discussed in chapter 2, several variables affect comparisons over time, such as variable subject choices, changes in student demographics, and adjustments to policies like the 'multiple examinations opportunity' (MEO), which was suspended in 2020. Additionally, the COVID-19 period saw an increase in the share of candidates taking less challenging subjects like Mathematical Literacy instead of core Mathematics, alongside a reduction in

repetition rates and school dropouts. As a result, making clear judgments about year-on-year NSC results is complex, with many factors at play (Selkirk forthcoming).

By subject, however, one would hope that from one year to the next, the same subject-specific mark roughly signals the same underlying ability or competency in that subject. Quality assurance processes are established for this very purpose. However, without another standardised benchmarked assessment against which to compare NSC performance, it is hard to determine the consistency in academic difficulty of NSC subjects over time. Nevertheless, efforts have been made to track the comparability of results in subjects like Mathematics and Physical Science as shown in Department of Basic Education reports (Department of Basic Education (DBE) 2024a) and other related documents (Gustafsson 2016). And earlier studies on the transition from the Senior Certificate (SC) to the NSC in 2008 investigated shifts in examination standards, especially in Mathematics (Hunt et al. 2011; Nel & Kristner 2009; Rankin et al. 2012).

The COVID-Generation project has provided new insights into the consistency of NSC standards during the pandemic, with studies by Whitelaw & Branson (2024) and Selkirk (forthcoming) shedding light on this issue, with a focus on the Western Cape. Additionally, research by Köhler (2024) for the same project, provides useful insight into the extent to which the NSC is rewarded in the labour market amidst a rise in the supply of matriculants in recent years. This chapter synthesises these findings, building on existing research on the predictive power and consistency of the NSC over time. The following sections will address three key questions: What processes exist to ensure consistency in NSC results from year to year and relatedly how consistent are the results overtime? During the pandemic to what extent, if any, was there grade inflation in the NSC, particularly in Mathematics? Is the NSC a useful signal of ability as reflected in its predictive power of academic success at university and in the extent to which it is currently rewarded in the labour market?

The sections that follow aim to address each of these questions in turn. The chapter concludes in Section 5 with an overview of the findings.

2 STANDARDISING THE NSC FROM YEAR TO YEAR

Umalusi plays a critical role in ensuring the quality of South Africa's National Senior Certificate (NSC). Before exam marks are even released, quality assurance begins with moderating the question papers, reviewing school-based assessments (SBAs), auditing the examination process to prevent cheating, and monitoring the marking process (Umalusi 2023). Umalusi is also involved in the standardisation of marking guidelines through dedicated meetings, ensuring that markers adhere to established guidelines. Verification procedures are conducted to confirm that these guidelines are applied across subjects and marking centres (Umalusi, 2023). The thoroughness of these processes is

evident in Umalusi's annual quality assurance reports, which detail for instance the steps taken to oversee the setting of question papers and readiness of exam centres to run the NSC examinations (see also Coetzee & Johl 2008). It is not uncommon for question papers to be returned for revisions following moderation, evidence that there is oversight of this process.

There are of course aspects of the NSC quality assurance process, some of which sit beyond the control of Umalusi, that could be improved. Concerns have at times been raised about the competency of markers (Coetzee & Johl 2008), with calls for competency-based testing in the marker appointment process, more training of markers (Fredericks, 2015), raising the proportion of scripts moderated beyond 10% and having clearer guidelines and oversight of marking assistants (Van Wyk 2016). Studies have also called for giving more attention to the competency of markers than equity and representivity imperatives in their appointment (Van Wyk 2016).

The standardisation process itself also has limitations. Once the exams are complete and before the results are released, Umalusi conducts a further round of subject-specific statistical standardisation (Umalusi 2018). It is important to note that this process does not involve psychometric techniques, such as item-response theory, which would compare assessments from different years relying on common "anchor" items to inform difficulty levels. The NSC exams do not include such anchor items, a limitation noted in several studies (Gustafsson & Taylor 2018; Zondo et al. 2020), although this issue is not unique to South Africa's school-leaving system (Coe 2010).

Instead, the NSC statistical standardisation process is based on a "norms-referencing" approach. This involves comparing the distribution of raw marks for each subject against a rolling three- to five-year average (Umalusi 2018; Department of Basic Education (DBE) 2021). If the distribution of the raw marks is below the historical average, the marks may be adjusted upwards, subject to the limitations that no adjustment should exceed half of the raw mark and no adjustment should exceed 10 percentage points above or below the raw mark. For example, a raw mark of 10 will never exceed 15 and a raw mark of 130 will never be adjusted to more than 160 or less than 100 in a subject with a maximum raw mark of 300 (Umalusi 2018). While adjustments can go both ways, they are more commonly made upwards, as seen in Table 1.

As the body responsible for quality assurance, Umalusi oversees a comprehensive range of processes designed to maintain the integrity of the NSC. Despite these efforts, expecting exact comparability in subject-specific results from year to year is ambitious in the absence of psychometric standardisation processes.

This norms-referencing system is likely to face limitations when there are significant shifts in the composition of students taking the exams, as was the case during the COVID-19 pandemic. As reported in an online Umalusi document (n.d.) "One of the main assumptions underlying standardisation is that for sufficiently large populations (cohorts), the distribution of aptitude and intelligence does not change appreciably from year to year, i.e. one can expect the same performance levels from cohorts of roughly the same size across time." Yet, as detailed in chapter 2, the disruptions caused by the pandemic led to significant changes in student flows at the secondary school level, including higher repetition rates and lower dropout rates. This placed significant pressure on the NSC system with much larger numbers of candidates writing, accompanied by changes in the composition of students (Selkirk forthcoming). Specifically, the NSC candidates during and just after the pandemic were anticipated to include a larger share of academically weaker students who would have previously dropped out before getting to Grade 12.

Unsurprisingly, the compositional changes in the 2021 NSC cohort occurred in conjunction with a high incidence of mark adjustments. According to Umalusi's reports, 28 (42%) of the 67 subjects presented for standardisation in 2021 had their raw marks adjusted upwards as shown in Table 1. The only other years when relatively more upward adjustments took place were 2016 and 2015 –years that also saw large increases in the candidate numbers due to changes in progression policy. While 9 subjects were upwardly adjusted in 2020, the larger shift in candidate composition in 2021 coincided with the significantly higher number of subject mark adjustments that year. The Department of Basic Education (DBE 2021) also noted that internal analysis indicated the 2020 cohort performed better academically than the 2019 cohort, based on their Grade 10 and Grade 11 results. This would typically result in higher pass rates, even without the pandemic's impact.

Table 1: List of standardisation decisions by Umalusi for the November NSC examinations, 2010-2023

Description	2010	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Number of subjects presented	39	41	58	59	58	58	67	67	65	67	66	66
Raw marks used	20	24	35	29	26	38	39	47	48	35	47	49
Subjects adjusted (upwards)	9	5	13	30	28	16	17	13	9	28	16	6
Subjects adjusted (upwards) (as % of subjects presented)	23%	12%	22%	51%	48%	28%	25%	19%	14%	42%	24%	9%
Subjects adjusted (downwards)	10	12	10	0	4	4	11	7	8	4	3	11

Source: Annual Umalusi reports on the Quality Assurance of the Department of Basic Education November National Senior Certificate. Reports for 2011 and 2013 could not be located on the Umalusi website at time of writing.

Maintaining consistency in quality assurance during the pandemic was undoubtedly more challenging. The logistics of administering the NSC exams became significantly more complex in this context, and especially as candidate numbers grew. Ensuring social distancing required careful adjustments to how exams were conducted, how meetings were held, and how the marking process was managed. Despite these challenges, Umalusi deserves recognition for their efforts in adapting the NSC processes to the pandemic environment, striving to uphold the integrity of the examination process. In response to the leaks of Mathematics Paper 2 and Physical Science papers in 2020, Umalusi also took a strong stance, even taking the matter to court to demand that the papers be rewritten (Ntsaluba 2020).

Moreover, recent reviews of the NSC, including a benchmarking study comparing it with five[48] other international examination systems, identify that the NSC is comparable to these other upper secondary qualifications (Umalusi 2022). However, standardising the NSC—with as many as 66 subjects to consider, as seen in 2023—remains a complex task due to the multitude of varying factors at play (Selkirk, forthcoming).

Despite Umalusi's extensive efforts, expecting exact comparability in subject-specific results from year to year remains ambitious, particularly in the absence of psychometric standardisation. Standardisation issues can occur, as evident in the transition from the Senior Certificate (SC) system to the National Senior Certificate (NSC) in 2008. This shift marked a significant break in the history of matric results, as the NSC introduced a new curriculum, assessment criteria, and marking system. The distinction between Standard Grade and Higher Grade was eliminated, and parts of the Mathematics syllabus were moved to an optional third matric paper. As the system transitioned from the SC, there were some jumps in results patterns as seen in high-level achievement in Mathematics from 2008 to 2009 (Selkirk & Wills, chapter 2).

A study by Hunt et al. (2011), using a standardised first-year test administered at the University of the Witwatersrand in 2006, 2009, and 2010, compared NSC school-leaving Mathematics scores with those of the previous Higher Grade (HG) Mathematics. The study found that NSC Mathematics scores were approximately 20-25 percentage points higher than the former HG scores. However, after adjustment, NSC scores were still strong predictors of mathematical readiness for university. Nel & Kristner (2009) also identified grade inflation, particularly for lower performing students, in the transition from the SC (2007) to the NSC (2008) at Stellenbosch University. Despite this, they too found the NSC to be a strong predictor of first-year NSC results (Nel & Kristner 2009, p965). Unfortunately. there has been far less research on grade inflation in the NSC beyond the initial concerns about maintaining standards in the Senior Certificate to NSC transition.

[48] The five other qualifications and programs are: (a) the International Baccalaureate Diploma Programme (IB DP), (b) the Kenyan Certificate of Secondary Education, (c) the New South Wales (NSW) Higher School Certificate (HSC), (d) the Zimbabwean Forms 5-6 Advanced Level, and (e) the Cambridge Assessment International Education AS & A Levels.

So far, this discussion has focused on quality assurance of the NSC, acknowledging Umalusi's considerable efforts while also noting the limits of this process without statistical standardisation based on anchor items. The introduction and chapter 2 also alluded to the non-comparability of overall NSC pass rates and bachelor pass rates over time, given a myriad of changes that occur in the underlying sample of full-time candidates and in students' subject-combination choices. Some of these changes are observable, but others are not.

In a recent analysis, Selkirk (forthcoming) explored improvements in NSC average results from 2008 to 2023 across all nine provinces. The study found that a significant portion of the improvement remains unexplained by observed compositional changes, pointing to factors other than changes in repetition rates, age, gender profiles, or subject combinations. One plausible explanation is that some of this improvement reflects genuine gains in education quality raising the competence of matric cohorts, as noted in recent studies (Gustafsson & Taylor 2022; Gustafsson 2023; McKinsey & Company 2024). But there could also be other unobserved changes occurring in grading processes and subject difficulty.

3 WAS THERE GRADE INFLATION IN NSC RESULTS DURING THE PANDEMIC?

3.1 Were overall NSC outcomes inflated during the pandemic?

3.1.1 Findings from Whitelaw & Branson (2024)

One way to assess whether any grade inflation in the NSC occurred during the pandemic is to compare students' results to a benchmarked standardised test before, during and just after the pandemic. For example, comparing NSC Mathematics results to a standardised mathematics assessment could offer insight into whether NSC exams, or the post-exam adjustments made to scores, inflated or deflated grades during the pandemic.

This is the approach taken by Whitelaw & Branson (2024) in their research note titled "Assessment matters: What can we understand about National Senior Certificate results during COVID-19 from university entrance exams?". In this study, they compare the NSC results—reflected in Admission Point Scores (APS)—of applicants to the University of Cape Town (UCT) with the same applicants' scores on the National Benchmark Tests (NBTs) over a four-year period: 2018, 2019, 2021, and 2022. The NBTs, taken by UCT applicants, complement the NSC by providing a quantitative measure of students' academic preparedness.[49]

[49] Whitelaw & Branson (2024) note that the UCT applicants in their dataset are predominantly from Quintile 5 schools (49-51%), followed by about 14% from independent schools, 13% from Quintile 4 schools, and 13% from Quintile 3 schools. Only 11% come from Quintile 1 or 2 schools.

The National Benchmark Tests (NBT) were commissioned by Higher Education South Africa (HESA) in 2005 to better understand university applicants' academic preparedness and to assist in placing first-year students in more appropriate programs. There are three components to the NBTs in South Africa. The Academic Literacy (AL) test assesses student's ability to understand and interpret written academic texts, as well as the ability to think critically and reason within an academic context. The Quantitative Literacy (QL) test assesses ability to apply mathematical reasoning to solve problems, interpret data, and use mathematical concepts in various practical contexts. The Mathematics (MAT) test evaluates a student's proficiency in basic mathematical concepts and problem-solving skills (NBT 2024). While NSC results (converted into APS) and NBT scores in AL, QL and Mathematics are all used to determine university admissions, comparing the two data sets can reveal how consistent or inflated the NSC results might be over time.

Whitelaw & Branson's (2024) analysis shows a slight increase in applicants' average APS scores from 2018/19 to 2021/22, alongside a decline in their NBT performance. The maximum possible APS score is 100, and the average APS scores for applicants in 2021 and 2022 were 67.21 and 66.96, respectively, compared to 65.75 and 65.48 for applicants in 2018 and 2019. Meanwhile, applicants' NBT results in Academic Literacy and Quantitative Literacy slightly decreased in 2021 and 2022, while NBT Mathematics scores for 2021 applicants also dropped compared to those from 2018 and 2019 (see Table 2).

Table 2: Results of UCT applicant pool by NSC year, 2018-2022 from Whitelaw & Branson (2024)

Academic performance	NSC 2018	NSC 2019	NSC 2021	NSC 2022
Average Admissions Point Score (APS)	65.75	65.48	67.21	66.96
NBT Academic Literacy (AL) result	58.18	57.40	57.91	56.94
NBT Quantitative Literacy (QL) result	50.29	48.42	48.37	47.18
NBT Math result	44.65	44.13	42.17	44.16
Math missing	0.17	0.18	0.22	0.20
Observations	**16 905**	**17 576**	**18 756**	**20 608**

Source: Whitelaw & Branson (2024). Notes: Sample is restricted to the applicant pool who wrote the DBE NSC the year prior to applying. All results expressed out of 100.

Not only at the average level, but across the entire distribution of NBT Academic Literacy and Quantitative Literacy scores, applicants in 2021 and 2022 consistently outperformed those in 2018 and 2019. Across the distribution of NBT scores, the average APS of the 2021 and 2022 applicants was approximately 1-2 percentage points higher than their 2018 and 2019 counterparts. This increase in APS scores suggests the possibility of grade inflation in the NSC results during the 2021 and 2022 years (Whitelaw & Branson 2024, p7).

Moreover, Whitelaw & Branson (2024) observe that applicants from no-fee schools in 2021 and 2022 exhibited larger average APS gains on 2018/19 applicants, within a given

quartile of NBT scores, compared to applicants from fee-charging schools. While shifts over time in NSC subject compositions could inflate or deflate average APS relative to NBT results, the authors are unable to ascertain which NSC subjects could be driving the elevated APS averages in 2021 and 2022.

A large share of applicants to the University of Cape Town (UCT) are likely to come from the Western Cape. The next study by Selkirk (forthcoming), also focusing on NSC trends in the Western Cape, offers a useful complement to the findings of Whitelaw & Branson (2024).

Selkirk's (forthcoming) predictions point to the pandemic having a negative effect on the results of the 2020 NSC cohort. However, her model suggests that performance in 2021 was higher than expected, particularly in Quintile 1–4 schools.

3.1.2 Findings from Selkirk (forthcoming)

Selkirk (forthcoming) conducts an exploratory analysis to predict NSC pass rates in the Western Cape for the years 2020 and 2021. She models the relationship between schools' NSC pass rates and various school and learner factors, including Grade 11 repetition rates, schools' average learner characteristics, subject combinations and prior average test scores while accounting for unobserved school characteristics using school fixed effects. The goal of this exercise is to assess how much actual NSC performance in 2020 and 2021 deviated from what would have been expected if the pandemic had not disrupted educational outcomes.

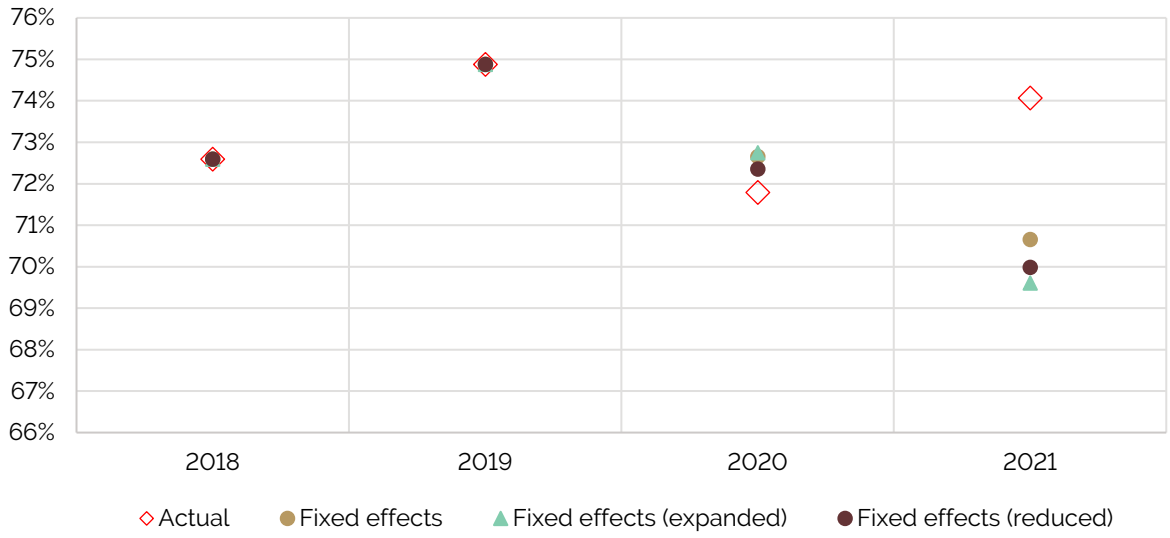
To make these predictions, Selkirk uses data from the 2018 to 2019 and 2018 to 2020 periods to estimate education production functions and predict what the pass rates for 2020 and 2021 might have been in the absence of pandemic-related disruptions. She focuses exclusively on the Western Cape, as this region provides unique access to school-level Systemic Testing data from 2010 to 2019, which allows her to control for prior learner abilities.

While individual NSC candidates cannot be linked to their previous Systemic Test results due to data anonymisation, Selkirk aggregates learner-level data and merges it at the school level. This enables her to conduct a school-level analysis using a sample of 374 schools, which represents 83% of the schools in the Western Cape that have any full- or part-time NSC candidates.

As a high-level summary, Selkirk's (forthcoming) predictions point to the pandemic having a negative effect on the results of the 2020 NSC cohort. However, her model suggests that performance in 2021 was higher than expected, particularly in Quintile 1–4 schools. This is described further below, with findings summarised in Figure 1.

- NSC pass rate inflation in 2020 is not supported by Selkirk's (forthcoming) modelling exercise. In 2020, the predicted average pass rate for Quintile 1-4 schools was approximately 1% higher than the actual pass rate when predictions were made based on estimates obtained using the 2018-2019 sample.
- NSC pass rate inflation in 2021 is suggested, however. For Quintile 1-4 schools the predicted pass rate was 4-5% lower than the actual pass rate (see Figure 1) (Selkirk forthcoming). Similarly, in Quintile 5 or Independent schools, the predicted pass rates for 2021 were lower than expected, but with smaller deviations (ranging from 1% to 1.5% lower than actual performance) than in Quintile 1-4 schools.

Figure 1: Predicted pass rates based on 2018-2019 estimates in Quintile 1-4 schools



Source: Selkirk (forthcoming) using constructed NSC/CEMIS/Systemics school-level data. Notes from Selkirk (forthcoming): "Fixed effects" refers to the predicted pass rates using the estimates obtained in Regression (3) in Table 1. "Fixed effects (expanded)" includes regressors for Grade 11 dropout and the percentage of writers and full-time candidates, while "Fixed effects (reduced)" includes only Grade 11 repetition, Grade 11 achievement, and year dummies as regressors.

These findings about pass rate inflation are consistent with those of Whitelaw & Branson (2024), who also observed deviations in NSC performance in 2021 compared to 2018/19, particularly for applicants from no-fee schools. For students from fee-charging schools, these deviations were less pronounced.

Selkirk (forthcoming) further demonstrates that Grade 11 repetition is positively correlated with higher NSC pass rates at the school level. This finding supports the "gatekeeping" argument, where schools that retain fewer students into Grade 12 tend to achieve higher pass rates. This emphasises the importance of evaluating schools' NSC results in

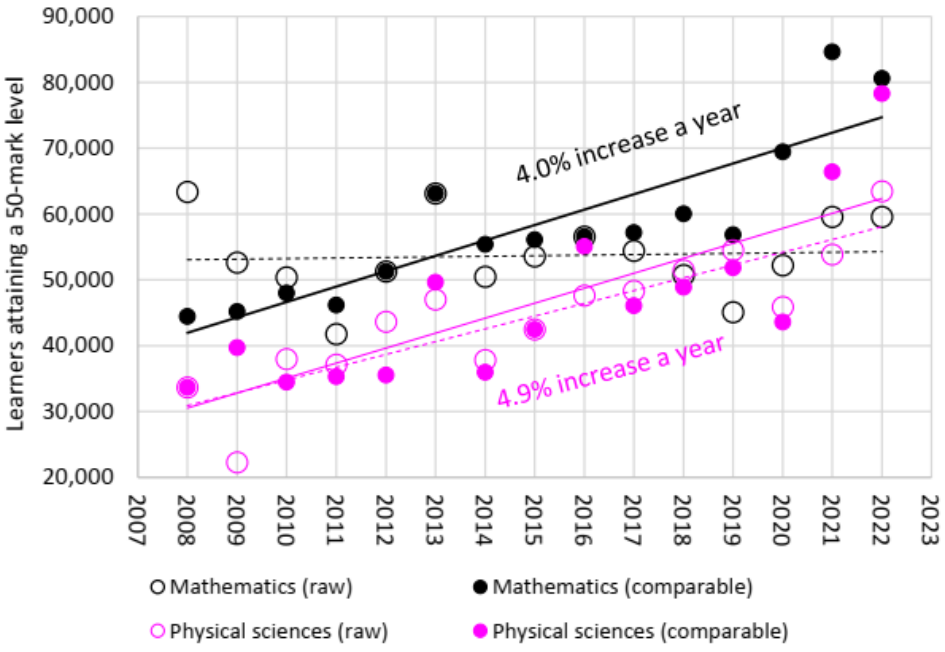
conjunction with their repetition practices, as these factors can heavily influence the outcomes (DBE 2024b). As stated in DBE (2024b, p5), "An over-emphasis on Grade 12 pass rates has detracted attention from the important and rather different matter of the extent to which learners in lower grades 'survive' to Grade 12 and succeed in obtaining the NSC".

3.2 Were NSC Mathematics outcomes inflated during the pandemic?

To my knowledge, there are two pieces of contrasting evidence that offer insight into the difficulty of NSC Mathematics outcomes during the pandemic.

The first piece of evidence from the Department of Basic Education (DBE), tracks the difficulty of reaching a 50% threshold in Mathematics and Physical Science (DBE 2024a). Specifically, it juxtaposes actual NSC Mathematics results (referred to in their reports as raw marks) at the 50%-mark level with an adjusted, "comparable" indicator value. The comparable values are recalculated using an adjustment process designed to account for fluctuations in exam difficulty over time, acknowledging that a score of 60% might represent different levels of competency in different years.

Figure 2: Attainment of 50% in Mathematics and Physical Science from DBE (2024a)



Source: Department of Basic Education, 2024a, Figure 2.5 on p18. Notes: Data on the results of full-time examination candidates in the year-end examinations (before supplementary examinations). The solid lines are trendlines for the comparable statistics, while the dotted lines are trendlines for the 'raw' statistics.

To create these comparable statistics, the DBE examines NSC Mathematics performance in 'benchmark' schools. These schools are high-performing, demographically stable institutions that also meet certain academic standards. A 2016 methodological report

(Gustafsson 2016) identifies around 32 such schools.[50] A key assumption of this method used is that the underlying ability of students in the benchmark schools remains consistent from one year to the next. Unfortunately, this assumption cannot be tested in the absence of other standardised assessment data, which is a shortcoming of the methodology.

Over the period 2008 to 2023, the recalibration of actual results to comparable statistics implies three things. First, subject difficulty alters slightly across years. Second, the adjustment analysis in DBE (2024a, p18) suggests that there has been a general shift overtime towards more demanding Mathematics examinations i.e. it has become increasingly difficult for learners to obtain marks at or above the 50%-mark threshold. As seen in Figure 2, the recalibration significantly *improves* the overall trend in the expected number of learners achieving Mathematics at the 50%-mark level. A much flatter trend is observed if actual 'raw' marks are used. The adjustment makes little difference to the overall Physical Sciences trend but brings the Mathematics trend in line with that of Physical Science. A third aspect implied by the adjustment process is that the Mathematics examination has increased in difficulty both pre-pandemic and into the pandemic years. The adjustment process very significantly raises the comparable values above the actual 'raw' values in 2021 and to a lesser extent in 2022. In Figure 2, the year 2021 shows a very large gap between the actual 'raw' and comparable values with respect to the numbers of learners attaining a 50%-mark level.[51]

Whitelaw & Branson (2024), find evidence of temporary grade inflation in NSC mathematics results in 2021 compared to 2018/2019 for the UCT applicant sample, although this issue abated somewhat in 2022.

In contrast with the findings in DBE (2024a, p18), Whitelaw & Branson (2024) find evidence of temporary grade inflation in NSC mathematics results in 2021 for a UCT applicant sample, although this issue abated somewhat in 2022. They compare NSC Mathematics performance to NBT Mathematics outcomes for applicants to UCT in 2018, 2019, 2021

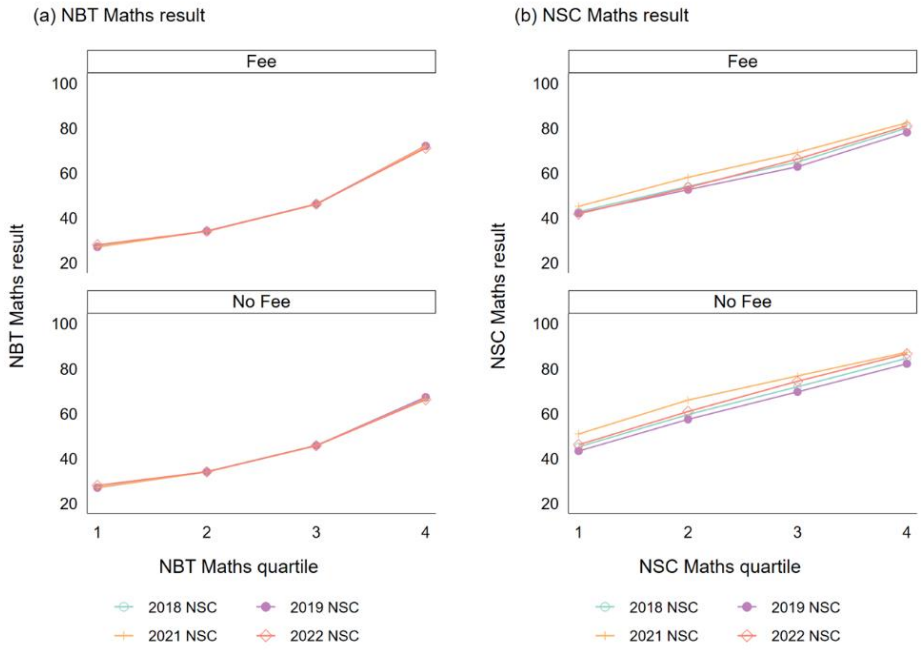
[50] A small purposive sample of schools is selected as the benchmark schools, on the basis of the apparent stability of these schools as described in Gustafsson (2016). The assumption is made that these schools are experiencing neither noteworthy improvements nor declines so that in identifying equivalent marks per year, this can be used to determine trends for the schooling system as a whole (Gustafsson 2016, p4). The selected schools had to be relatively well-performing; should not display large changes in terms of racial composition; should display stable Grade 12 enrolment; the percentage of Grade 12 learners taking the subject had to be stable; and the school's percentage of Grade 12 learners taking the subject had to be at least 50%. It is not clear whether the benchmark sample of 32 schools has changed since the report by Gustafsson (2016) was released.

[51] It is not clear to what extent the adjustment process in more recent years has likely been based on the same 'stable' sample from 2008-2015 (Gustafsson, 2016). The extent to which these 32 schools continued to meet the criterion for stability in a highly unstable period is unclear.

and 2022. The analytical approach assumes that the composition of the UCT applicant pool before and during the pandemic did not shift in ways that are related to the performance on the NSC. In support of this assumption, the performance of the UCT applicant pool at each NBT Mathematics quartile remained consistent each year. This is seen in the first panel of Figure 3 where the graph lines for 2018, 2019, 2021 and 2022 applicants closely align.

A visible increase in NSC Mathematics scores is observed for applicants from both fee-charging and no-fee schools in 2021, compared to applicants in 2018 and 2019. This rise is evident across all quartiles (1st through 4th). In contrast to DBE (2024a) this suggests that achieving at least 50% in Mathematics became easier (not more difficult) in 2021 and 2022 than in 2018/19. While NSC Mathematics scores reverted somewhat to pre-pandemic levels in 2022, they remained slightly elevated when compared to 2018/19 applicants' NSC Mathematics scores (Whitelaw & Branson 2024).

Figure 3: UCT applicants' Mathematics results by NBT Mathematics quartile and school type, from Whitelaw & Branson (2024)



Source: Whitelaw & Branson (2024), Figure 5. NSC Mathematics results by NBT Mathematics performance for applicants to UCT with NBT Mathematics scores. Note: Sample is restricted to the applicant pool who wrote the DBE NSC the year prior to applying.

In summary, these two studies present mixed evidence regarding grade inflation in NSC Mathematics during the pandemic years. However, each study uses distinct methodologies and samples, and both are subject to their own assumptions and limitations that should be considered when interpreting their findings. One assumption

common to both is that the underlying ability distribution of students did not shift over time in ways that are related to performance on the NSC. Whitelaw & Branson (2024) verify using the NBTs that the competencies of the UCT applicants appear quite consistent from one year to the next, adding credence to their analysis. But this verification is not possible in the DBE (2024a) analysis. One cannot rule out that competencies of NSC candidates in the benchmark schools in DBE (2024a) are lower in pandemic years as leniency in school-based assessments resulted in higher promotion rates. This may likely explain the divergent findings across the two studies and lends more credibility to the results of Whitelaw & Branson (2024) identifying slight pandemic-related grade inflation in 2021/22 compared to 2018/19. However, this does not negate the possibility that the NSC Mathematics examination had become more difficult over time in years preceding the pandemic (Gustafsson 2023).

4 THE SIGNALLING ABILITY OF THE NSC

4.1 Signalling of academic preparedness for university

Despite comparability issues that may arise in NSC examinations, a substantial body of research highlights a positive association between performance in the National Senior Certificate (NSC) and university outcomes. In particular, pre-pandemic evidence points to a strong association between school-level Mathematics and success in university courses that require quantitative skills (Hunt et al., 2011; Pleace & Nicholls 2021; Rankin et al., 2012). However, the predictive power of the NSC for university success seems to vary depending on the course of study. This is evident when comparing studies that evaluate the NSC's ability to predict university performance against results from the National Benchmarking Tests (NBTs) for students enrolled in fields such as economics, accounting, management, or medicine (Allers et al. 2016; Bokana & Tewari 2014; Carpenter & Roos 2021; Rankin et al. 2012; Mabizela & George 2020).

Mabizela & George (2020) investigated the association between a combination of NSC outcomes and/or NBT proficiency levels and end of first-year outcomes for 1 652 medical students from 2011 to 2017 at The University of the Witwatersrand. Four NSC subjects of interest (English, Mathematics, Life Science and Physical Science) were statistically significant predictors of academic success in the first year of study and two of three NBT domains, namely the Quantitative Literacy and Academic Literacy, were also predictive. But collectively the four NSC subjects only accounted for 19% of the variance in academic success in the first year of the medical programme while the NBT results accounted for a greater amount of the variance in predicting academic success at 26%. By contrast, Rankin et al. (2012) in predicting first-year economics test scores at two universities found that NSC Mathematics was a slightly better predictor than the NBT test results. But they found that only for NSC Mathematics results over 65% was there a strong correlation with first-year economic outcomes. In the range of NSC Mathematics marks that are closer to the

minimum admission requirements (60–69%), NSC Mathematics marks were very weak predictors of students' university performance.

While NSC results, particularly in Mathematics, do provide valuable insights into students' preparedness for university, a significant portion of university success can be attributed to other unobserved factors. Both Mabizela & George (2020) and Rankin et al. (2012) demonstrate that more than half of the variance in students' academic performance is linked to factors beyond their performance in the NSC or NBTs. Speculatively, these unobserved factors may include aspects such as students' learning styles, financial stability, living arrangements, and the availability of academic support as well as grit and motivation (Pleace & Nicholls 2021).

In summary, while the NSC is a useful signal of academic readiness for university, various other factors may be important for success. Numerous studies also recommend that for university placements and admissions, the NSC should be used alongside alternate assessments such as the National Benchmark Tests (NBTs) (Allers et al. 2016; Mabizela & George 2020; Nel & Kristner 2009; Rankin et al. 2012). This is particularly important for applicants with lower NSC scores, as the combination of NSC and NBT results better support the identification of areas in which students may need additional support to thrive in a university environment.

Despite comparability issues that may arise in NSC examinations, a substantial body of research highlights a positive association between performance in the National Senior Certificate (NSC) and university outcomes.

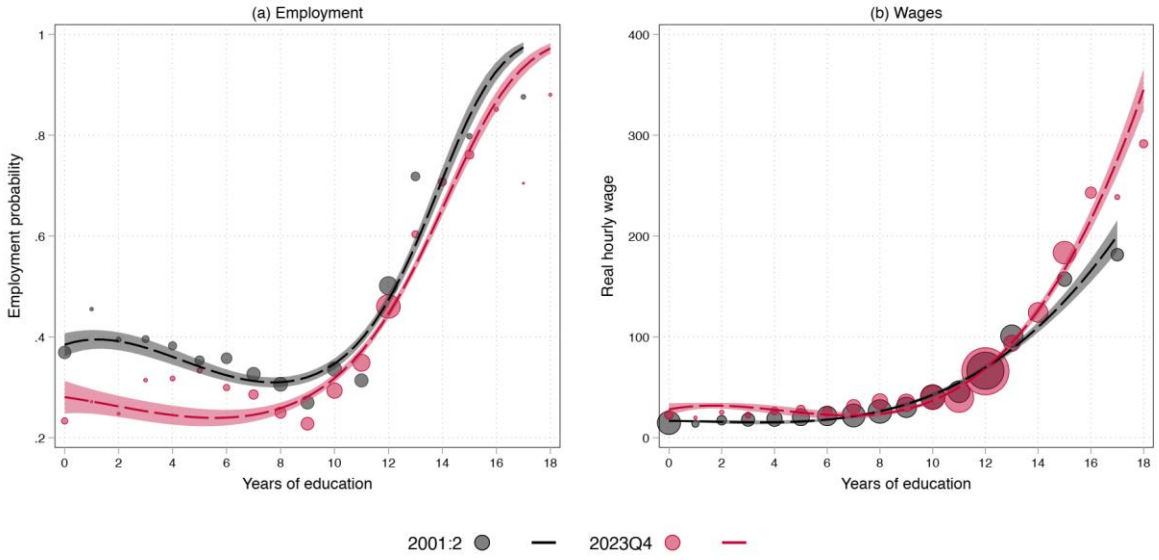
4.2 Signalling in the labour market

In any period, it remains the case that more education is associated with a better chance of employment and conditional on employment, higher earnings (Salisbury 2016; Köhler 2024). In recent analysis for the COVID-Generation project, Köhler (2024) examines employment probability and wage earnings profiles by years of schooling and estimates the returns to different levels of education in South Africa over the period 2001 to 2023. His findings are instructive in identifying the extent to which a matric or an equivalent certificate is rewarded in the labour market and how this has changed over time.

Despite the rising supply of matriculants, Köhler (2024) finds that completing a matric (or equivalent) was still a significant educational milestone in South Africa at the end of 2023. Both the probability of employment and average wages increase once individuals achieve 12 years of education, which corresponds to completing secondary schooling. He also finds that increasingly, there is little advantage in the labour market, both with respect to

the probability of employment and potential earnings, to having an incomplete secondary education relative to a primary education (see Figure 4).

Figure 4: Employment probability and mean real hourly wages by years of education in 2001 and 2023 from Köhler (2024)



Source: Köhler (2024), Figure 3. using LFS 2001:2:2 and QLFS 2023Q4, with non-public QLFS data on earnings. Notes from author's Figure 3: "Sample restricted to individuals of working-age (15 – 64 years). Estimates weighted using sampling weights. Standard errors are adjusted for the complex survey design. Cubic functional form of the fitted line overlaid. Shaded area represents 95 percent confidence intervals. Wages adjusted for inflation and expressed in January 2024 Rands."

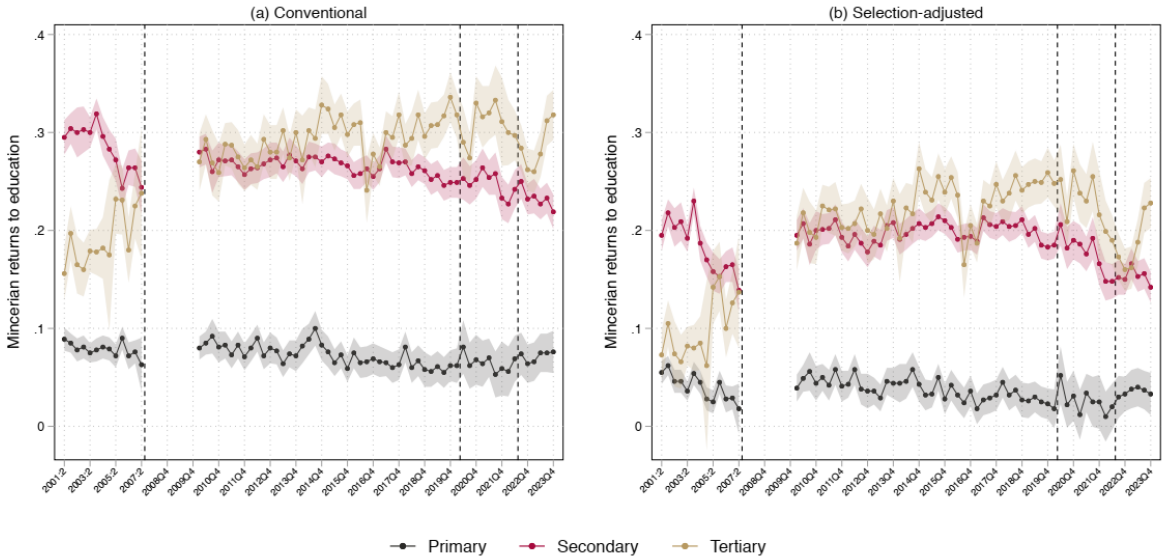
However, the return to having a matric (conditional on employment) has been declining for the entire working age population over the years. In 2001, completing secondary education yielded a nearly 20% return in the labour market (conditional on employment), declined slightly to 18% in 2019 before dropping further to 14% by the end of 2023 (see panel b of Figure 5). He also finds that declines in the returns to a matric or equivalent in recent years (say 2019 to 2023) are evident for both African and White individuals aged 15-65 years.

In contrast to secondary education, Köhler (2024) observes that returns to tertiary education (conditional on employment) have increased substantially. From 2001 to 2011, the return to tertiary education nearly tripled, rising from 7% to 20%. The highest return to tertiary education was observed in 2019 at 26%, before slightly declining to about 23% by 2023 (see Figure 5, panel b). With the significant overall rising trends in the returns to tertiary education, this is indicative of a growing demand for workers with higher qualifications which has outpaced supply.

In summary, despite the decline in returns to a matric in the labour market, especially between 2019 and 2023, it still provides a notable advantage over an incomplete secondary or primary education. But amidst rising returns to tertiary education, pursuing

further education is increasingly important for securing better opportunities and earnings in the South African labour market.

Figure 5: Returns to education in South Africa from 2001 – 2023 from Köhler (2024)



Source: Köhler (2024), Figure 9. using Labour Force Survey 2001:2 – 2007:2; Quarterly Labour Force Survey 2010Q1 – 2023Q4. with non-public earnings data. Notes from author's Figure 9. "Panel a provides a conventional estimate of Mincerian returns while panel b adjusts estimates for selection into employment. Shaded area represents 95 percent confidence intervals. Selection-adjusted estimates obtained using the conventional Mincerian model specification but additionally including the inverse Mills ratio estimated using Heckman's two-stage estimation procedure. Vertical lines represent, in order, the change of the survey instrument, the onset of the COVID-19 pandemic in March 2020, and the repeal of all remaining COVID-19 pandemic restrictions in June 2022. Wage data not available from 2008Q1 – 2009Q4."

5 CONCLUSION

The National Senior Certificate (NSC) in South Africa is an important qualification that commands significant attention. Umalusi's efforts to uphold the quality of the NSC are commendable, with numerous quality assurance systems in place. However, there are limitations to the statistical standardisation process, especially in the absence of common items across exam papers from year to year.

This challenge becomes evident when comparing standardised NBT results to NSC results of university applicants from year to year. For instance, during the pandemic, average Admission Points Score values for University of Cape Town (UCT) applicants in 2021 and 2022 increased by about 1-2 percentage points for a given NBT score relative to 2018/19, hinting at slight grade inflation in the NSC, particularly among applicants from no-fee schools (Whitelaw & Branson 2024, p7). Furthermore, Selkirk's (forthcoming) model predicts that while the 2020 NSC cohort's performance was slightly lower than expected, performance in 2021 was surprisingly high, especially in Quintile 1-4 schools. This also

coincides with the high incidence of subjects being upwardly adjusted in the 2021 NSC relative to other years between 2017 and 2023.

The Department of Basic Education's (DBE 2024a) analysis suggests that the difficulty level of NSC Mathematics papers has increased both before and during the pandemic years. In contrast, Whitelaw & Branson's (2024) analysis of UCT applicants' NSC and NBT results implies pandemic-related grade inflation across the distribution of Mathematics results 2021 and, to a lesser extent, 2022. The analysis in Whitelaw & Branson's (2024) is based on a more robust methodology than the analysis in DBE (2024a) because they can compare students' NSC performance to performance on another benchmarked assessment. But Whitelaw & Branson's analysis does not rule out the possibility that the NSC Mathematics examination had become more difficult over time in years preceding the pandemic (Gustafsson 2023).

Given the critical role the NSC plays in university admissions and workforce recruitment, it is essential to engage in transparent, in-depth analysis of NSC and subject-specific results (Zondo et al. 2021). As Gustafsson (2020) reflects, what would help is "better access to, and analysis of, the raw examinations data by a wider range of researchers. It may be true that examinations data are ill-suited for gauging trends, but without intensive analysis of this data, key questions remain around matters such as subject choices, subject difficulty, and examination standards." One practical step to supporting improved analysis of trends would be to provide analysts access to the full set of NSC data, that includes both full-time and part-time candidates. Furthermore, being able to observe NSC subject results before they are conflated with the contribution of School-Based Assessment scores would help to provide a clearer picture of exam paper difficulty and enable researchers to employ more statistically rigorous techniques when studying the data.

Notwithstanding inconsistencies that may arise in standards, the matric continues to have signalling power with respect to academic preparedness, although potentially more so at higher levels of NSC performance. Furthermore, the matric still provides a notable advantage over an incomplete secondary or primary education in the labour market, despite declining returns to a matric in recent years (Köhler 2024).

6 REFERENCES

Allers, N.J., Hay, L. & Janse van Rensburg, R.C. 2016. Preliminary study: Predictors for success in an important premedical subject at a South African medical school. *African Journal of Health Professions Education*, 8(1), p81-83. https://doi.org/10.7196/ajhpe.2016.v8i1.647

Ardington, C., Wills, G. & Kotze, J. 2021. COVID-19 learning losses: Early grade reading in South Africa. *International Journal of Educational Development*, 86, 102480.

Böhmer, B. & Wills, G. 2023. COVID-19 and inequality in reading outcomes in South Africa: PIRLS 2016 and 2021. COVID-Generation RESEP working paper. Stellenbosch: Stellenbosch University.

Bokana, K.G. & Tewari, D.D. 2014. Determinants of Student Success at a South African University: An Econometric Analysis. *Anthropologist*, 17(1), p259–277.

Carpenter, R. & Roos, L. 2021. The relationship between the national Senior Certificate and the national Benchmark Test for accounting students at a South African university. *The Business and Management Review.* 12(1), p241-248.

Coe, R. 2010. Understanding comparability of examination standards. *Research Papers in Education*, 25(3), p271-284.

Coetzee, W. & Johl, R. 2008. The role of moderation in the National Senior Certificate examination. *Journal for Language Teaching*, 42(2), p26-41.

Department of Basic Education (DBE). 2021. National Senior Certificate Examination Report 2020. Pretoria: Department of Basic Education.

Department of Basic Education (DBE) 2024a. 2023 NSC Exam Results Technical Report. Pretoria: Department of Basic Education.

Department of Basic Education (DBE) 2024b. Review of progress in the basic education sector to 2024. Analysis of key statistics. Pretoria: Department of Basic Education.

Fredericks, I. 2015. Call to test markers in SA discouraged. IOL, 26 October, 2015. (Accessed: 21 November 2024).

Gustafsson, M. 2016. Understanding trends in high-level achievement in Grade 12 mathematics and physical science. Pretoria, Department of Basic Education.

Gustafsson, M., & Taylor, S. 2018. Treating schools to a new administration: Evidence of the impact of better practices in the system-level administration of schools. *Journal of African Economies*, 27(5), p515-537.

Gustafsson, M., & Taylor, S. 2022. What lies behind South Africa's improvement in PIRLS? An Oaxaca-Blinder analysis of the 2011 and 2016 data. Working paper 02/2022. Stellenbosch University, Department of Economics.

Gustafsson, M. & Nuga Deliwe, C. 2020. How is the COVID-19 pandemic affecting educational quality in South Africa? Evidence to date and future risks. NIDS-CRAM working paper. Stellenbosch: Stellenbosch University.

Gustafsson, M. 2020. The debates around South Africa's school exam results need a richer flow of data. The Conversation. Available: https://theconversation.com/the-debates-around-south-africas-school-exam-results-need-a-richer-flow-of-data-148283 (Accessed 17 March 2023).

Gustafsson, M. 2023. Trends in targets with respect to NSC results permitting entry into mathematically oriented programmes at a university. Report produced for the Department of Basic Education. Unpublished.

Hunt, K., Ntuli. M., Rankin, N., Schoer, V. & Sebastiao, C. 2011. Comparability of NSC mathematics scores and former SC mathematics scores: How consistent is the signal across time? *Education as Change*, 15(1), p3–16.

Köhler, T. 2024. A Paradox of Progress: Rising Education and Unequal Labour Market Returns in Post-Apartheid South Africa. COVID-Generation Working Paper. Research on Socio-Economic Policy, Stellenbosch University.

Mabizela, S.E. & George, A.Z. 2020. Predictive validity of the National Benchmark Test and National Senior Certificate for the academic success of first-year medical students at one South African university. *BMC Medical Education* 20 (article 152). https://doi.org/10.1186/s12909-020-02059-8

McKinsey & Company. 2024. Spark & sustain: How all the world's school systems can improve learning at scale. New York

National Benchmark Tests (NBT) Project. 2024. What is in the NBTs? Available: https://www.nbt.ac.za/content/what-nbts (Accessed: 21 November 2024).

Nel, C. & Kristner, L. 2009. The National Senior Certificate: Implications for access to higher education. *South African Journal of Higher Education*, 23(5), p953-973.

Ntsaluba, G. 2020. Is the 2020 National Senior Certificate credible? City Press, 13 December 2020. Available: https://www.news24.com/citypress/news/is-the-2020-national-senior-certificate-credible-20201213 (Accessed: 21 November 2024).

Pleace, M. & Nicholls, N. 2021. Grit, motivation and university grades. *South African Journal of Economics*, 90(1), p21-36.

Rankin N, Schoer V, Sebastiao C, van Walbeek C. 2012. Predictors of academic performance: National Senior Certificate versus National Benchmark Test. *South African Journal of Higher Education*. 26, p564–85.

Salisbury, T. 2016. Education and inequality in South Africa: Returns to schooling in the post-apartheid era. *International Journal of Educational Development*, 46, p43-52. https://doi.org/10.1016/j.ijedudev.2015.07.004

Selkirk, R. forthcoming. Grade repetition in South Africa: impacts on achievements, flows, and school completion. Unpublished Thesis. Stellenbosch: Stellenbosch University.

Umalusi. 2018. Presentation to the Portfolio Committee on Basic Education: Standardisation. Umalusi Quality Council for General and Further Education and Training. Available: https://pmg.org.za/files/180207Umalusi.ppt (Accessed: 19 November 2024).

Umalusi. 2022. International Benchmarking of the South African National Senior Certificate (NSC). Pretoria: Umalusi Quality Council for General and Further Education and Training.

Umalusi. n.d. Understanding statistical moderation Available. https://www.umalusi.org.za/docs/introductions/2014/intro1121.html#:~:text=Standardisation%20of%20results%20is%20achieved,case%20the%20following%20may%20occur (Accessed: 19 November 2024).

Umalusi. 2023. Report on the Quality Assurance of the Department of Basic Education (DBE) November 2023. National Senior Certificate Examinations and Assessment. Pretoria: Umalusi.

Van Wyk, P.S. 2016. The marking process of the National Senior Certificate: exploring perceptions of quality. PhD thesis. University of the Free State.

Van der Berg, S., Hoadley, U., Galant, J., van Wyk, C. & Böhmer, B. 2022. Learning losses from COVID-19 in the Western Cape. Evidence from Systemic Tests. RESEP report. Stellenbosch: Stellenbosch University.

Whitelaw, E. & Branson, N. 2024. Assessment matters: What can we understand about National Senior Certificate results during COVID-19 from university entrance exams? COVID-Generation RESEP note. Stellenbosch: Stellenbosch University.

Yu, D. & Adams, C. 2022. Labour market trends in South Africa in 2009-2019: A lost decade? Stellenbosch Economic Working Papers: WP03/2022. Stellenbosch: Stellenbosch University.

Zondo, N., Zewotir, T. & North, D.E. 2021. The level of difficulty and discrimination power of the items of the National Senior Certificate Mathematics Examination. *South African Journal of Education*, 41(4), p1-13.

4 Transitioning beyond matric in South Africa

Gabrielle Wills

ABSTRACT

During and after the COVID-19 pandemic, South Africa saw record numbers of passes in the National Senior Certificate (or commonly referred to matric). Against a context of rising school completion, this chapter explores the post-school transitions of recent matriculants in South Africa, addressing the following question: What are recent matriculants doing? The chapter highlights how an increasing proportion of recent matriculants (identified as youth aged 15-24 with only a matric or equivalent qualification) are classified as "Not in Employment, Education, or Training" (NEET). Prior to the COVID-19 pandemic (2014-2019), around 44-45% of recent matriculants were NEET. This percentage rose to 47.5% in 2021, peaked at 55% in early 2022, and remained elevated at about 49.8% in the first quarter of 2024. Matriculants who are NEET in 2024 are also in a more vulnerable position than matriculants who were NEET pre-pandemic. The growing NEET problem among recent matriculants, and youth more generally, is related to reduced employment prospects amidst limited expansion of post-school education and training (PSET) opportunities. The employment probability age profile of those with only a matric in 2024 roughly resembled the comparable profile of individuals without a matric in 2014. Nevertheless, having a matric compared to leaving school without it still plays a protective function in limiting youth's NEET exposure. Expanding PSET opportunities, aligning education with the evolving demands of the labour market, and creating robust pathways for youth to transition from education to meaningful employment are critical to addressing the rising NEET issue and improving the prospects of recent matriculants and youth.

1 INTRODUCTION

Individuals born just after the turn of democracy in 1994 have the highest years of completed education of any cohort in South African history, and this is set to rise further among younger age cohorts. This is largely due to youth staying in school for longer and completing matric (Branson et al. 2020; Statistics South Africa 2024, p64). As discussed in Selkirk & Wills (chapter 2), whereas just 48% of youth[52] had a completed secondary education in 2010, this increased to 55% by 2018 and reached almost 64% by the start of 2024. As discussed in this chapter however, the average annual growth rate in the number of passes and bachelor passes in the National Senior Certificate (NSC) or matric has been 2.9% and 6.1%, over the period 2008 to 2022, significantly outstripping assumed growth in the population of 18-year-olds over the same period. Commensurately, the average years of schooling of the South African labour force have been rising over time alongside significant declines in educational inequality (Köhler 2024).

These trends are worth celebrating. At the individual level, prospects for social mobility are typically higher for each additional level of completed education. At the country level, higher average schooling levels -resulting in a more knowledgeable populace - are linked to higher economic growth (Barro 2013; Hanushek & Wößmann 2010). Yet, educational progress in South Africa is occurring in a complex environment characterised by slow economic growth (National Treasury, 2024 p2), high and rising unemployment, especially among youth (Köhler 2023; Mudiriza et al. 2023), public finance constraints in further expanding post-school education and training (PSET) opportunities (Kruger 2024), and growing concerns about mismatches between youth's skills and the skills requirements of employers in a changing world of work (World Bank 2019).

In lieu of the rising tide in school completion and rising numbers of youth leaving school with NSC bachelor passes - particularly during and post-COVID-19 - this chapter gives attention to post-school transitions. At the most basic level, this chapter aims to answer the question: What are recent matriculants doing? Relatedly, what proportions of recent matriculants are accessing post-school education and training opportunities or jobs? And how have these patterns changed in the past decade? In answering these questions, trends among youth, broadly defined as 15- to 24-year-olds, are considered as the main focus of this chapter is on recent matriculants. However, at other times, I broaden the definition of youth to 15- to 34-year-olds to contextualise the findings to youth more broadly.

The chapter highlights that rising rates of school completion over the past decade have occurred alongside rising proportions of recent matriculants that are 'not in employment, education and training' (NEET), with a notable increase seen around the pandemic period.

[52] These estimates are derived by fitting a quadratic line through school completion by age estimates, identifying the maximum school completion rate across individuals roughly aged 15-34 years-old as discussed in Selkirk & Wills (in chapter 2 of this report).

This adds to the existing literature on the burgeoning problem of NEETs in South Africa (Branson 2018; Branson et al. 2019; Mudiriza & De Lannoy 2023).

The literature review presented in section two and the analysis in section four highlight that a key contributing reason to rising NEET rates among recent matriculants is that labour market conditions for matriculants have been deteriorating. This aligns with studies documenting a deterioration in employment probabilities in the labour market (Köhler 2024; Yu & Adams 2022), especially for youth (Mudiriza et al. 2023; Mudiriza & De Lannoy 2023). For the working age population, employment prospects since the Global Financial Crisis of 2008 have declined gradually and persistently not only for those with an incomplete secondary education, but also for those with a matric and post-school qualifications (Köhler 2024).

Another contributing factor to high NEET rates among youth and recent matriculants is that expansion in the post-school, education and training (PSET) system in terms of youth enrolment has been limited since 2015. This argument is further advanced in chapter 5 by Kruger. Despite the need to further expand access and quality in PSET, financial and capacity constraints face this sector in at least the medium-term. Without a recovery in the labour market, which requires an uptick in economic growth, the situation of high NEET rates among recent matriculants is unlikely to change in the short to medium-term.

2 BACKGROUND

Post-school transitions into adulthood are typically better for those with higher levels of education. The global literature reveals that youth who complete secondary education are less subject to adverse outcomes than youth who do not. This includes reduced vulnerability to adverse factors such as poverty, compromised mental health, substance abuse, involvement in delinquent behaviours, incarceration, and prolonged reliance on social welfare systems, as highlighted in studies by Bjerk (2012), De Witte et al. (2013), Henry et al. (2012), and Lund et al. (2018). Not finishing school, then, presents a loss of human potential and raises concerns for societal well-being.

Yet achieving a completed secondary education is not a full guarantee of an easy transition into adulthood or employment (Branson et al. 2019). Middle-income countries are facing large and growing rates of youth unemployment as youth populations expand, new entrants to the labour market outpace the creation of jobs, and changes in technology and automation result in increased demand for higher skill levels (World Bank, 2019). South Africa specifically, faces some of the highest rates of youth unemployment in the SADC[53] region, and has comparatively low tertiary enrolment rates by middle-income standards (Khuluvhe & Ganyaupfu 2023; Kruger in chapter 5). Together these

[53] Southern African Development Community

factors contribute to an environment characterised by high probabilities of youth not in employment, education or training (NEET).

This section outlines what we know from existing studies about the links between educational attainment and labour market outcomes in South Africa, provides an overview of key issues shaping a high youth unemployment environment and outlines what is known about NEET rates in South Africa.

2.1 Educational attainment and labour market outcomes in South Africa

In the South African context, a strong association exists between educational attainment and labour force attachment. Relative to having a primary or an incomplete secondary education, there are benefits of having a matric (or equivalent qualification) not only for employment prospects, but for wages earned once a job is acquired (Köhler 2024). A highly convex relationship exists between educational attainment and wages: despite relatively little reward for every additional year of education before matric, much higher returns for every additional year of education completed from Grade 12 onwards are well documented (see for example Branson & Lam 2021; Keswell & Poswell 2004; Köhler 2024; Moses et al. 2017; Van der Berg 2014). And the extent of this convexity appears to have become even more pronounced in recent years (Köhler 2024). Mlatsheni & Ranchhod (2017) found that, for youth transitioning from school into the labour market, those with a matric were approximately 9% more likely to become employed within a two-year period compared to those who dropped out before completing matric. By contrast, failure to complete secondary school is associated with a decreased probability of finding stable employment as well as prolonged spells of unemployment (Branson et al. 2019; Ingle & Mlantsheni 2017; Köhler 2024). Even if employed, non-matriculants are often relegated to precarious, low-income work (Branson & Kahn 2016; Ingle & Mlatsheni 2017; Mlatsheni & Ranchhod 2017; Salisbury 2016; Van der Berg & Van Broekhuizen 2012).

The strong connection between education and labour market outcomes from Grade 12 is partly attributable to the signalling effect of passing the externally assessed matric (see chapter 3 by Wills), but also because of actual higher productivity. However, once education quality is controlled for, the convex schooling-earnings profile becomes significantly more linear, suggesting that education quality, and not just the level achieved, is an important predictor of labour market earnings (Burger & Teal 2016).

A highly convex relationship exists between educational attainment and wages. Despite relatively little reward for every additional year of education before matric, much higher returns for every additional year of education completed from Grade 12 onwards are well documented (Keswell & Poswell 2004; Branson & Lam 2021; Köhler 2024; Moses et al. 2017; Van der Berg 2014).

Although premature exit out of school is increasingly less common in South Africa (Department of Education (DBE) 2024), and the share of the employed with at least a matric is growing (Köhler 2024; Yu & Adams 2022), significant strides still need to be made in ensuring youth advance to further studies. Youth who have a completed secondary schooling do not necessarily fare well in the labour market relative to more qualified individuals. And premature labour market entry is a concern where youth, even with a post-matric tertiary qualification, are not guaranteed employment (Mlantsheni & Ranchhod, 2017). From 2009 to 2019, before the negative impacts of the pandemic, Yu & Adams (2022, p11) found that degree holders had an employment absorption rate (EAR)[54] of 86.5%, not 100%. By contrast, individuals with a matric had an EAR of 60% over the same period, while the EAR of those with an incomplete secondary school was just 36%.

2.2 Youth labour market outcomes in South Africa

South Africa's high unemployment is proving to be one of the country's most intractable long-standing policy challenges. Relative to SADC country partners and the Sub-Saharan African country average, South Africa's unemployment rate among 15– to 24-year-olds is very high. The only SADC country with higher reported youth unemployment is land-locked neighbouring country Eswatini, as seen in Table 1.

Table 1: Youth unemployment rates (population aged 15-24) for some SADC countries, 1998-2022

Location	1998	2004	2010	2016	2022
Tanzania	5.8%	5.7%	6.0%	3.6%	3.5%
Malawi	6.6%	6.6%	6.6%	6.8%	6.8%
Mozambique	5.7%	6.3%	6.8%	7.3%	7.7%
Zambia	21.4%	29.8%	28.9%	17.2%	9.9%
Zimbabwe	13.9%	7.9%	9.2%	8.9%	16.7%
Lesotho	22.0%	22.6%	23.1%	24.0%	25.1%
Angola	37.4%	37.4%	38.2%	34.2%	28.4%
Namibia	44.2%	43.0%	44.5%	44.2%	38.6%
Botswana	38.1%	41.4%	34.8%	35.4%	43.5%
South Africa	36.3%	36.2%	45.5%	43.9%	49.8%
Eswatini	47.4%	54.4%	54.2%	47.0%	65.3%
Sub-Saharan Africa average	**10.3%**	**9.8%**	**9.8%**	**9.3%**	**9.1%**

Source: Data from International Labour Office, Trends Econometric Models (ilo.org/wesodata). Persons in unemployment are defined as all those of working age who were not in employment, carried out activities to seek employment during a specified recent period AND were currently available to take up employment given a job opportunity. The unemployment rate expresses the number of unemployed as a per cent of the labour force.

[54] An employment absorption rate is calculated by dividing the increase in formal employment by the increase in the labour force. Specifically, Yu & Adams (2022) refers to the EAR as the ratio of the actual growth in employment among a group to the targeted growth rate defined as the employment growth rate needed for the labour market to absorb net entrants between two periods.

Despite significant investments from government, private and civil society sectors into Active Labour Market Programmes (ALMPs) in South Africa (De Lannoy et al. 2020), high youth unemployment levels remain persistent. In a pre-pandemic context, youth faced deteriorating labour market outcomes (Yu & Adams 2022; Mudiriza et al. 2023). For instance, Yu & Adams (2022) find that the youth (15-34) share of the total employed decreased by 8.5 percentage points from 28.6% to 20.1% over two decades from 1999 to 2019. In absolute terms, youth employment also decreased between 2009 and 2019 (Yu & Adams 2022). Labour market outcomes for youth further deteriorated during the COVID-19 pandemic, as youth were hit harder by employment losses than adults (Köhler 2023). One of the reasons for this is that the nature of the employee to employer power relationship may be different for youth versus non-youth (Mlantsheni & Ranchhod 2017, p5-6). For example, employers' opportunity cost of dismissing youth may be lower than that of dismissing adults where employers have invested less in youth than longer tenured workers, and youth are less likely to be unionised or protected by legislation (Rees 1986).

While economic growth that simulates job creation for a range of skills and range of sectors is a necessary requirement to address youth unemployment, De Lannoy et al. (2020) acknowledge that failing to address micro-level barriers to employment faced by young people may lead to the persistent exclusion of young people from poor backgrounds from the South African labour market. To illustrate this, De Lannoy et al. (2020) synthesise existing evidence between 1994 and 2018 on the intersecting factors at the micro-level contributing to the complex problem of persistently high youth unemployment levels in South Africa. These barriers include poverty, spatial segregation, a lack of social and cultural capital and the high cost of job search.

Both demand- and supply-side factors are identified in the literature as contributing to deteriorating labour market conditions for youth in the past decade (Mudiriza et al. 2023).[55] While both may be drivers of high youth unemployment, De Lannoy et al. (2020) argue that there is far less evidence about the demand-side drivers of youth unemployment, including employer behaviour and attitudes towards hiring young people. This leads to an overemphasis on supply-side challenges in tackling youth unemployment (De Lannoy et al. 2020, p119).

However, a comprehensive review by the National Planning Commission (NPC, 2017) of existing programmes aimed at addressing youth unemployment argues that, within South Africa, there are various programmes that seek to address the full range of labour market challenges on the supply-side and the demand-side. This review - conducted before the roll-out of a large national youth employment stimulus project (the Presidential Youth Stimulus) — concluded that "considerable resources are being channelled towards a wide range of youth labour market programmes" and "are reaching significant numbers of young people" although tend to target youth who are "fine" or perhaps "at risk" with

[55] Developing a multidimensional youth labour market index (YLMI) - to provide a more holistic understanding of the labour market conditions experienced by young people – Mudiriza et al. (2023) identify very low and deteriorating YLMI scores for South Africa from 2013 to 2023. Decomposing the index points to dysfunction in the labour market for youth on both the supply- and demand-side.

relatively fewer resources going towards programmes servicing "marginalised" youth (NPC 2017, p52). In improving youth labour market transitions, the review proposes three models: supporting enterprise development (developing SMME businesses), improving access to the formal sector, and enhancing the social economy. But it ultimately concludes that effectively addressing unemployment requires economic growth such that there is greater absorptive capacity. This lies outside the bounds of strategies aimed at addressing youth transitions.

There is also consensus that an overriding priority in addressing youth unemployment is to ensure that the country's basic education system prioritises raising the quality of schooling so that school-leavers are equipped with the necessary numeracy and literacy skills to compete for entry level jobs, or to advance into the PSET system (De Lannoy et al. 2020). There are concerns that young people may progress through the basic education system without gaining basic literacy and numeracy skills as the minimal requirements for entry-level jobs (NPC 2017, p52). Quality concerns surrounding post-schooling are also present in the debate, with low graduation rates and high dropouts from PSET institutions constraining improved transitions into the labour market (DHET 2018).

2.3 NEET rates among youth in South Africa

In addition to high youth unemployment, South Africa's high NEET rates are well documented. Using labour force data from quarter 1 of 2023, Mudiriza & De Lannoy (2023, p6) identify that of youth aged 15-24, one third (33.3%) were NEET, equating to about 3.4 million youth. More than 2 million of these NEET youth expressed wanting to work, which is contrary to notions that NEET youth are disinterested or unwilling to work.[56]

Against this context, South Africa is unlikely to meet Sustainable Development Goal 8, Target 8.6 to substantially reduce the proportion of youth not in employment, education or training by 2030 (United Nations 2015). Although many other countries will also struggle to meet this target, South Africa's NEET rate among youth aged 15-24 is higher when compared to some other SADC countries, BRICS nations, and the Sub-Saharan Africa average, as seen in Table 2.

Persistently high NEET rates present a challenge for youth development. Youth who are NEET are highly vulnerable in the labour market and are at risk of social exclusion, especially if they face long periods being NEET (Branson et al. 2019).

[56] Being NEET is also associated with gender and income disparities. Key factors associated with being a NEET youth include being female, living in income-poor households, being married, and living in a household with young children under seven years.

Persistently high NEET rates present a challenge for youth development: Youth who are NEET are highly vulnerable in the labour market and are at risk of social exclusion, especially if they face long periods being NEET (Branson et al. 2019). Of concern is that from 2013 to 2023, increasingly larger shares of NEET youth were identified as having been unemployed for long periods of time (more than 3 years) (Mudiriza & De Lannoy 2023).

An issue that we focus on in more detail in this chapter is that a rising share of NEET youth in the past decade are identified as having a matric (Mudiriza & De Lannoy 2023, p7). In the analysis that follows, more attention is given to the interconnection between having a matric and being NEET.

Table 2: Percent of youth aged 15-24 who are NEET, SADC and BRICS country comparison

Country	2005	2010	2016	2022
Russian Federation	14.8%	14.2%	12.4%	12.2%
China	17.7%	16.8%	13.3%	12.4%
Tanzania, United Republic of	9.0%	12.0%	14.9%	14.3%
Malawi	17.2%	17.9%	20.5%	18.9%
Brazil	19.1%	19.0%	23.8%	21.0%
Angola	26.1%	27.4%	27.6%	21.2%
Mozambique	21.7%	20.3%	22.4%	23.3%
India	36.1%	28.9%	29.0%	25.8%
Sub-Saharan Africa	23.1%	22.4%	23.5%	26.0%
Zimbabwe	19.0%	17.6%	21.3%	30.2%
Democratic Republic of the Congo	18.5%	20.6%	23.3%	30.2%
Namibia	33.6%	34.1%	33.6%	31.2%
Zambia	39.6%	38.2%	34.8%	31.6%
South Africa	34.4%	33.1%	29.3%	32.9%
Lesotho	35.4%	35.3%	35.1%	35.0%
Eswatini	39.7%	38.3%	35.5%	35.0%
Botswana	44.2%	36.2%	33.1%	37.0%

Data source: International Labour Office, Trends Econometric Models (ilo.org/wesodata). Countries sorted by NEET rates in 2022.

2.4 Post-school education and training system

Addressing the youth NEET problem requires an interlinked two-pronged approach: improving conditions in the labour market and creating PSET opportunities for youth that in turn improve youth's labour market prospects (Branson et al. 2020). Unfortunately, not enough youth in South Africa further their education post-secondary schooling as reflected in cross-country comparisons. For instance, Khuluvhe & Ganyaupfu (2023) find

that South Africa's absorption rates (or Gross Enrolment Ratios) - calculated as headcount enrolment expressed relative to the size of the national population aged 20-24 - in tertiary education between 2017–2020 lagged that of other middle-income nations such as China, Colombia, Algeria and Malaysia.

At least in the medium-term, South Africa faces significant barriers in expanding PSET opportunities and raising the quality of provision in the sector, as explained by Kruger in chapter 5. In summary, Kruger (chapter 5) finds that "PSET over the last two decades has played a stronger role in absorbing youth and keeping them out of the NEET category, but that positive trend has faltered since 2015." From 1995 to 2015, there was significant growth in enrolment in both higher education and vocational education, and large strides were made with respect to racial transformation (see Kruger, chapter 5). In recent years (2015 - 2022), and despite a significant redistribution of spending to higher education following the Fees Must Fall movement[57], absorption rates - calculated as headcount enrolments relative to the population aged 18 to 22 - declined from 43% to 41%.[58] This decline has occurred over a period of rising private returns to post-school education (Köhler 2024).

In a constrained economic environment, university funding until 2026/27 is projected to remain below estimated expenditure in 2023/24, while only marginal increases are projected for TVET funding (Kruger, chapter 5). This has obvious negative implications for improving absorption rates. There is also, of course, the need to improve efficiencies in higher education, reflected in improved graduation rates, rather than simply expanding enrolment (DHET 2018).

This background section has established that there exists a well-developed literature on labour market outcomes by educational status, youth NEET rates, and trends in the PSET system in South Africa. In the analysis that follows, this chapter focuses in on examining these factors among recent matriculants using household survey data.

[57] Large increases in payments to students for bursaries and living costs in the form of the National Student Financial Aid Scheme (NSFAS) has crowded out direct spending on universities and funding Technical and Vocational Educational Training (TVET).
[58] The source of this decline is a decline in enrolment in TVETs and CETs in 2020.

3 METHOD

3.1 Data

To examine the activities and status of recent matriculants (and youth more broadly), this chapter relies primarily on the Quarterly Labour Force Survey (QLFS). The QLFS is a nationally representative household-based sample survey conducted by Statistics South Africa (Stats SA). It collects data on the labour market activities of individuals aged 15 years and older who live in South Africa. The QLFS is a face-to-face interview except during COVID-19 from quarters 2 (Q2) of 2020 to quarter 4 (Q4) of 2021, when telephonic interviewing was used (and smaller samples were obtained).

The available sample of youth aged 15-24 in the QLFS for quarter 1 from 2014 to 2024, is shown in Table 3 by youths' highest qualification. The group aged 15-24 with a matric (or equivalent qualification) are referred to as 'recent matriculants' in the analysis that follows.

In addition to tracking labour force outcomes, the QLFS data is useful for analysing educational access and qualifications obtained. The frequent release of QLFS data also means it is current. However, like other household surveys, it also faces some limitations for examining youth activities. Sample sizes of youth with post-school qualifications are small. Another issue is that South African household surveys typically do not sample individuals in hostels or residences.[59] In 2010, before the expansion of free higher education, about 20.1% of university students lived in residences (DHET 2011). These students would be excluded from the sampling frame of household surveys. For this reason, survey data results on post-school youth experiences should be evaluated against other institutional administrative data where available (Branson 2018).

Table 3: Sample sizes in quarter 1 (Q1) QLFS data from 2014-2024, youth aged 15-24

	Educational status					
Year (Quarter 1)	Less than matric and in school	Less than matric and not in school	Matric only	Post-school qualification	Unknown	Total
2014	7544	4164	4135	484	85	**16412**
2015	5594	3748	3414	424	74	**13254**
2016	5285	3096	3127	396	79	**11983**
2017	5098	3001	3093	416	104	**11712**
2018	5046	2864	3229	367	92	**11598**
2019	4649	2591	3194	375	82	**10891**
2020	4740	2547	3174	387	81	**10929**
2021	3875	1458	2174	203	43	**7753**
2022	3930	1763	2539	229	52	**8513**
2023	4848	2309	3343	341	92	**10933**
2024	5101	2363	3702	362	89	**11617**

Data source: QLFS 2014 - 2024.

[59] As stated in Statistics South Africa (2024, p2), "The QLFS sample covers the non-institutional population, except for workers' hostels…Students living in a dormitory on the school compound would, however, be excluded."

Another limitation is that one cannot completely rule out some measurement error affecting the identification of qualification levels and school completion, although trends overtime are unlikely to be affected very much by this. While household surveys capture information on highest level of education completed, it is difficult to ascertain for a small group of individuals whether a matric has been obtained in their education journey. Specifically, for individuals with NTC1-3/N1-2 certificates or 'Diplomas and certificates with less than grade 12', it cannot be determined if they first completed matric or transitioned into further studies from an incomplete secondary (Branson 2018).

3.2 Definitions

At various points, this paper refers to youth NEET rates which are calculated as the number of young persons aged 15-24-years-old who are NEET divided by the total youth population aged 15-24-years-old. The NEET classification used by Statistics South Africa is adopted in this paper. This results in NEET estimates that are slightly higher than those reported by Mudiriza & De Lannoy (2023, p4).[60] As mentioned above, the analysis typically focuses on youth aged 15-24 but extends the analysis to youth aged 25-34 where required to contextualise the findings.

4 FINDINGS

While this chapter primarily focuses on the activities of recent matriculants, it begins by contextualising their post-school transitions within broader patterns of youth transitions. Section 4.1. addresses the question: In what activities are youth engaged, and how do these activity profiles vary by age and education status? This section then examines trends in the activity profiles of recent matriculants.

Seven mutually exclusive activities in which youth may be engaged are identified as follows:

i. Enrolled in an ordinary school[61],
ii. Engaged in 'other' education that is not in an ordinary school, TVET, other college or higher education institution (an almost negligible category),
iii. Employed but not studying,
iv. Employed and studying concurrently,
v. Attending a higher education institution (HEI) such as a public or private university,
vi. Attending a TVET college or other college (public or private), and
vii. Not in employment, education or training (NEET).

[60] Mudiriza & De Lannoy (2023) reclassify as not NEET, youths who cited the reason for their labour force inactivity as being a student/scholar. But these youth did not report attending any educational institution in earlier questions in the QLFS.

[61] An ordinary school is a public or private school that provides education for all learners, excluding schools for students with special educational needs.

Section 4.2, then focuses on the last activity category vii, examining NEET patterns by age and educational status, and NEET rate trends over the past decade. Sections 4.3 and 4.4. then explore reasons for rising NEET rates among matriculants, with a focus on employment trends and absorption of youth in PSET.

4.1 Activity profile of youth

4.1.1 Activity profiles in 2023/24

In the first quarter of 2024, 40.7% of youth aged 15-24 were still enrolled in school, making up the largest share of youth activity. The second largest share of this group, accounting for 35.4%, were categorised as NEET as shown in Table 4. However, these average statistics hide how the activities of teenagers and youth alter as they transition from one year to the next.

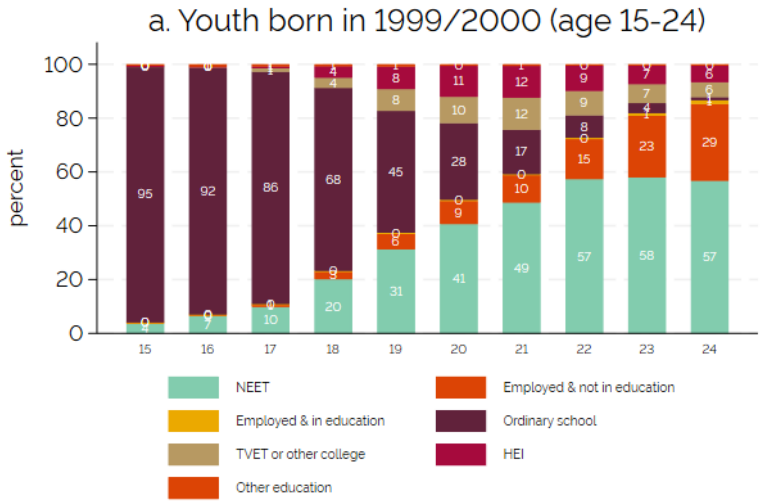
Table 4: Activities of youth aged 15-24 by education status, QLFS 2024 quarter 1

	Q1 2024				Q1 2024 (less than matric)	
	Less than matric	Matric only	Post-school qualification	Total	Less than matric, in school	Less than matric, not in school (i.e. dropouts)
Ordinary school (%)	65.44 (0.62)	2.19 (0.25)	0.13 (0.13)	40.68 (0.50)	99.79 (0.07)	
TVET or other college (%)	1.00 (0.13)	13.61 (0.62)	6.35 (1.17)	5.64 (0.24)		2.89 (0.37)
Higher Education institution (%)	0.05 (0.04)	18.63 (0.70)	13.91 (2.08)	7.12 (0.27)		0.15 (0.11)
Other education (%)	0.64 (0.10)	0.17 (0.08)		0.45 (0.07)		1.86 (0.30)
Employed & in education (%)	0.16 (0.05)	1.18 (0.19)	1.34 (0.53)	0.57 (0.08)	0.21 (0.07)	0.08 (0.06)
Employed & not in education (%)	6.37 (0.32)	14.42 (0.64)	31.93 (2.72)	10.18 (0.32)		18.5 (0.87)
NEET (%)	26.34 (0.58)	49.8 (0.88)	46.35 (2.94)	35.36 (0.49)		76.52 (0.95)
Total (%)	**100**	**100**	**100**	**100**	**100**	**100**
N observations	7463	3702	362	11527	5101	2362

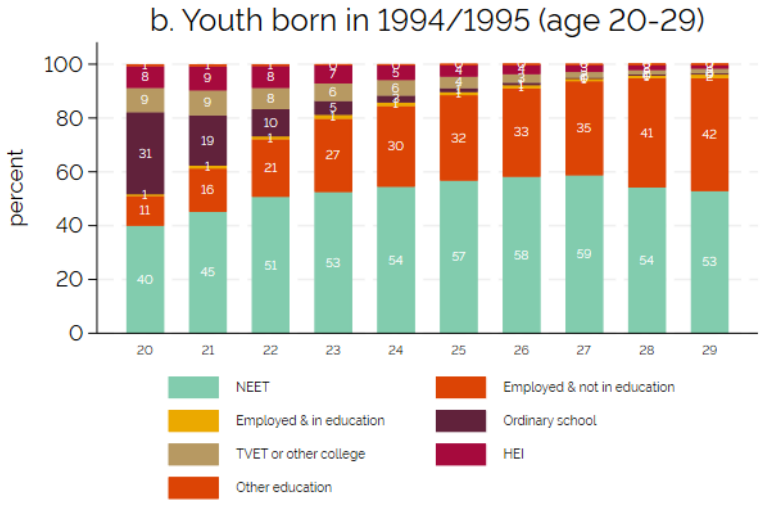
Data source: QLFS, author's own calculations. Notes: Q = quarter. Estimates are weighted using sampling weights and standard errors (in parentheses) are adjusted for the complex survey design. Sample includes individuals aged 15-24 with known education status. Matrics are those with 12 years of completed education. Observations with missing education status are excluded from calculation (n = 89).

A clearer picture emerges from Figure 1, which presents an age-specific analysis of the activities of South African youth born in 1999/2000 or born in 1994/1995.[62] Activities for the 1999/2000 cohort are traced here for ages 15-24, while activities for the 1994/1995 cohort are traced for ages 20-29. Up until the age of 17, the vast majority of youth are enrolled in ordinary schools. As they grow older, they may leave school to pursue further education in the PSET system or enter the workforce, sometimes balancing both. But by the age of 22, the proportion of youth born in 1999/2000 classified as NEET exceeds the proportion engaged in either education or employment related activities.

Figure 1: Activity status of youth by age for two cohort groups, QLFS Q1 2014-Q1 2024



Source: QLFS Q1 2014 - Q1 2024, own calculations. Weighted.

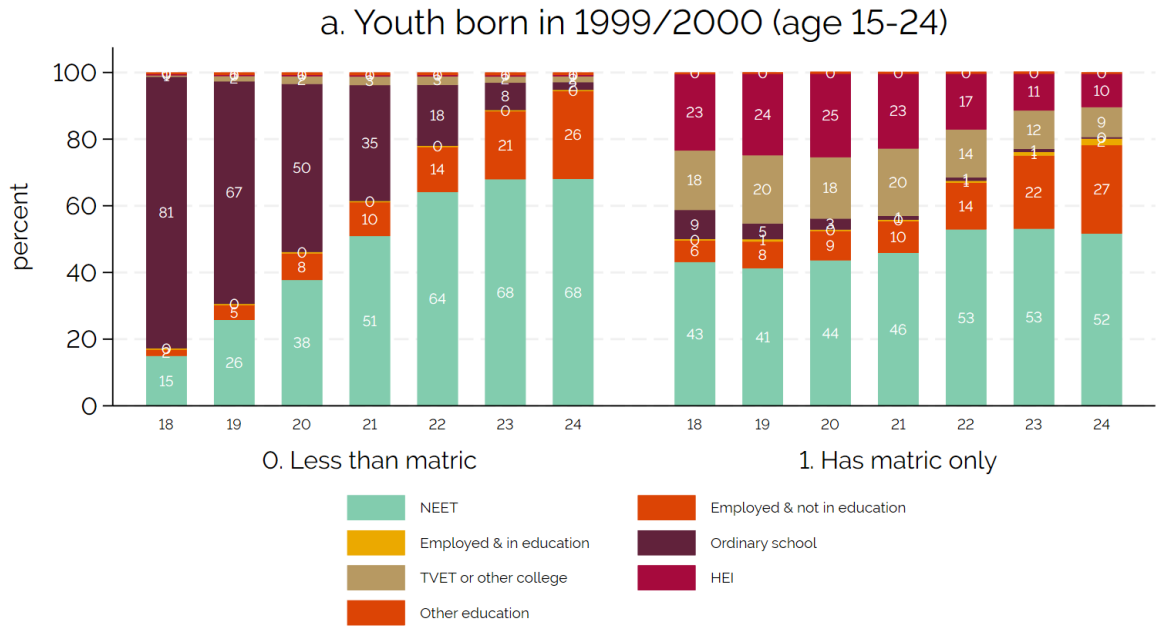


Source: QLFS Q12014-Q12024, own calculations. Weighted.

[62] The age-specific analysis requires larger samples so two cohorts are pooled together using QLFS data from 2014 to 2024. The reason for only using 2014 data onwards, is that the NEET variable is not available in earlier years of the QLFS.

Figure 2 then provides an age-specific analysis, comparing the activity profiles of youth with less than a matric and those with a matric for a 1999/2000 birth cohort. Youth with a matric are much more likely to enter the PSET system, while youth without a matric are more likely to remain in school into early adulthood to complete their education, rather than enrolling in a PSET institution.[63] Even among youth born in 1999/2000 that have a matric but no post-school education, from the age of about 22 they are more likely to be NEET than either enrolled in the PSET system or employed. This reflects an insufficient absorption of matriculants into either PSET or employment, while the large majority of those who drop out of school are not benefiting from available pathways to improve their educational qualifications.

Figure 2: Activity status of a 1999/2000 birth cohort by age (20-29) and matric attainment (individuals with a post-school qualification are excluded from the analysis)



Source: QLFS Q1 2014 - Q1 2024, own calculations. Weighted.

4.1.2 Activities of recent matriculants: Trends from 2014 to 2024

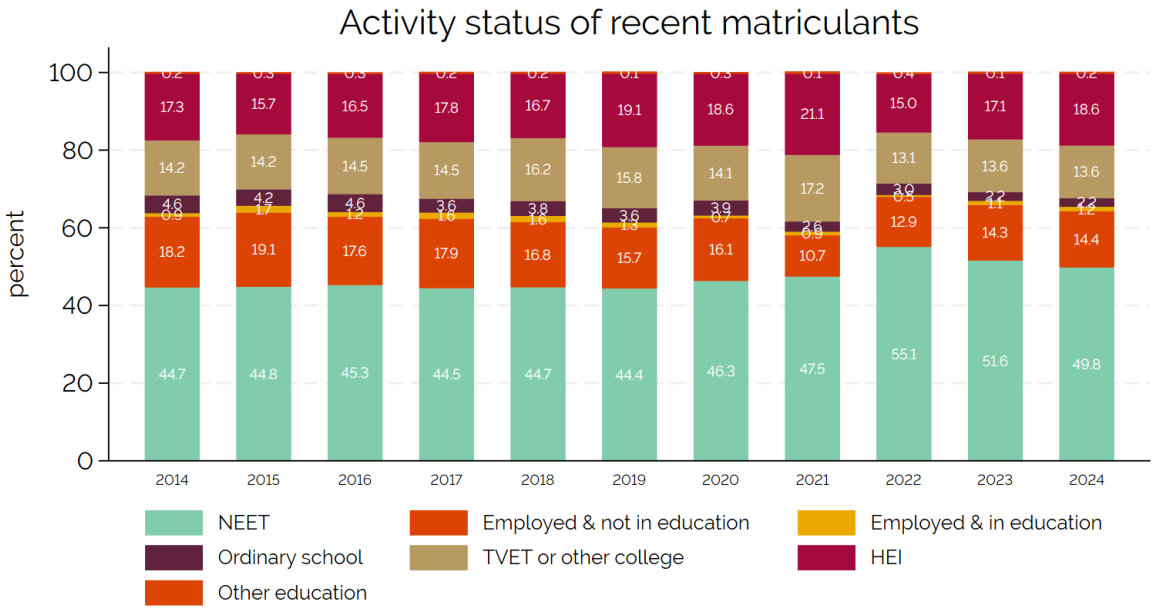
As shown in Table 4, 14.4% of recent matriculants were employed but not studying in Q1 2024, while 1.2% were employed and studying concurrently. Additionally, 18.6% were attending a higher education institution (HEI), and 13.6% were enrolled in a TVET or other type of college. A further 2% were reported as being in an ordinary school.[64] However, nearly half of recent matriculants (49.8%) were NEET in Q1 2024.

[63] Although as discussed in a report by the Department of Basic Education (2024, p5), the incidence of much older youth in the school system has been declining as survival to matric has improved.

[64] This likely reflects measurement error in either the reporting of their highest level of education or their current place of enrolment.

Over the past decade, the proportion of recent matriculants who are NEET has steadily increased, along with the average rise in NEET rates among all youth (aged 15-24). Before the COVID-19 pandemic (2014-2019), around 44-45% of recent matriculants were NEET, but this number increased to 47.5% in 2021, peaked at 55% in early 2022, and remained high at approximately 49.8% in Q1 2024. In general, matriculants have made up an increasing share of all NEET youth in the past decade (Mudiriza & De Lannoy 2023). Whereas 37.1% of NEETs aged 15-24 had a matric only in Q1 2014, matriculants comprised nearly a half (49.0%) of youth NEETs by Q1 2024. The rise in NEET rates for this group between 2014 and 2024 is statistically significant.

Figure 3: Trends in the activities of recent matriculants (individuals aged 15-24 whose highest qualification is a matric or equivalent), QLFS 2014-2024, quarter 1



Source: QLFS, quarter 1, own calculations. Weighted. Aged 15-24.
Highest qualification is a matric or equivalent (12 years of education).

4.2 A closer look at NEET rates

4.2.1 NEET rates among youth aged 15-24 by educational status

As highlighted in the above analysis, the average NEET rate for all youth aged 15-24 (at 35.4% in Q1 2024) masks significant differences based on educational status and age. Among youth aged 15-24 with only a matric, the NEET rate was notably higher at 49.8% than the average for all youth aged 15-24. For all youth who have not completed matric, the NEET rate is generally lower, mainly because many are still completing their schooling. However, among school dropouts — defined here as youth aged 15-24 who have less than a matric and are not attending school — the NEET rate was as high as 76.5% in Q1 2024 (see the last column of Table 4). In other words, at the start of 2024, almost 5

out of 10 youth aged 15-24 with a matric only were NEET, while nearly 8 out of 10 of their peers who dropped out of school were NEET.

The PSET system can only temporarily alleviate the NEET issue over a person's lifetime. As shown in Figure 1, PSET participation peaks among youth aged 19 to 24. Once their studies are completed, the labour market becomes the primary outlet for absorbing youth. However, the PSET system could contribute more towards absorbing youth under the age of 25, especially those without a matric (see Kruger, chapter 5). While opportunities exist for those with a grade 9 but less than matric to further their education, especially through enrolling in TVET colleges, taking up these opportunities has historically and in recent times been very uncommon (Branson 2018, Wills & Qvist 2023). Among school dropouts aged 15-24, only 2.89% were enrolled in a TVET college in Q1 2024 (see Table 4). Over the last decade, there has been no improvement in the proportion of school dropouts (aged 15-24) attending TVET colleges (see Table A1 in the appendix). The chapter returns to the issue of youth absorption in PSET in section 4.4.

At the start of 2024, almost 5 out of 10 youth aged 15-24 with a matric only were NEET, while 8 out of 10 of their peers who dropped out of school were NEET.

4.2.2 NEET rates across younger (15-24) and older youth (25-34)

NEET rates are generally lower for youth aged 15-24 compared to those aged 25-34, due to the protective effect of schooling. However, NEET rates for the 25-34 age group have risen significantly, from 44.9% at the start of 2014 to 55.5% at the start of 2022 and then declining slightly to 51.9% by the first quarter of 2024 (see Table 5). The protective effect of a post-school qualification becomes particularly evident for the 25-34 age group. As seen in Q1 2024, NEET rates for this 25– to 34-year-old group are statistically significantly lower for those with post-school qualifications (32%) compared to those with only a matric (48%) and those without a matric (64%).

Table 5: NEET rates in the years 2014, 2019, 2022 and 2024, QLFS quarter 1

	Age 15-24					Age 25-34				
	Less than matric, in school	Less than matric, not in school	Matric only	Post-school quali-fication	Total	Less than matric, in school	Less than matric, not in school	Matric only	Post-school quali-fication	Total
NEET rate Q1, 2014	0	74.09	44.66	36.83	32.18	0	56.1	38.65	21.89	44.89
	(0.00)	(0.85)	(0.91)	(2.60)	(0.43)	(0.00)	(0.72)	(0.89)	(1.19)	(0.51)
NEET rate Q1, 2019	0	75.73	44.38	38.81	33.22	0	59.13	42.83	25.91	48.34
	(0.00)	(0.92)	(0.94)	(2.71)	(0.49)	(0.00)	(0.71)	(0.86)	(1.23)	(0.50)
NEET rate Q1, 2022	0	79.75	55.08	39.67	36.99	0	66.87	50.29	34.78	55.46
	(0.00)	(1.23)	(1.21)	(3.95)	(0.63)	(0.00)	(0.92)	(1.15)	(1.82)	(0.67)
NEET rate Q1, 2024	0	76.52	49.8	46.35	35.36	0	63.66	48.31	32.09	51.94
	(0.00)	(0.95)	(0.88)	(2.94)	(0.49)	(0.00)	(0.76)	(0.85)	(1.24)	(0.51)

Data source: QLFS, author's own calculations. Notes: Q = quarter. Estimates are weighted using sampling weights and standard errors (in parentheses) are adjusted for the complex survey design. Sample includes individuals with known activity status. Matrics are those with 12 completed years of education.

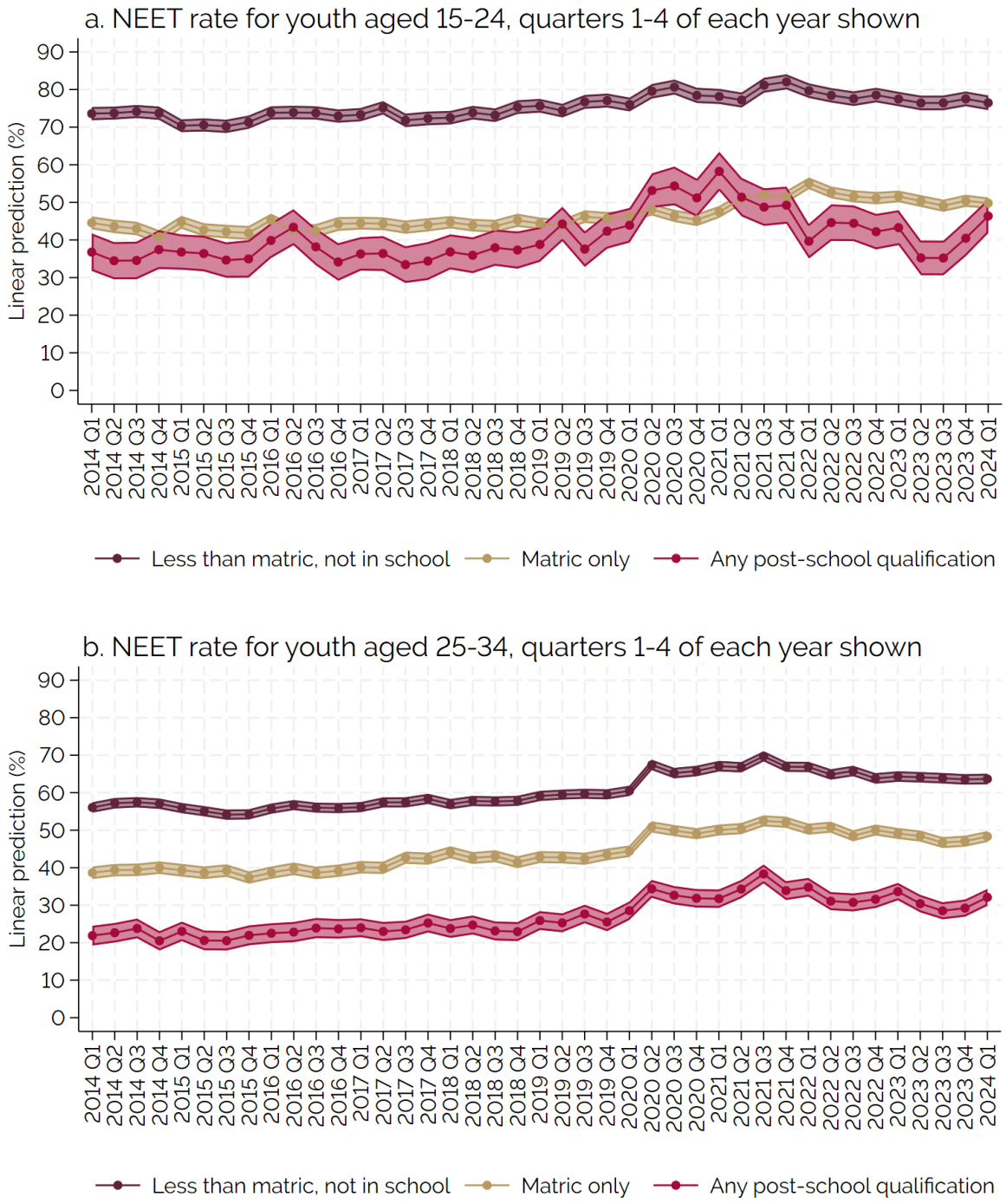
4.2.3 Trends in NEET rates from 2014 to 2024

Trends in NEET rates for every quarter from Q1 2014 to Q1 2024 are illustrated in Figure 4a and Figure 4b. These figures break down NEET rates by educational status (no matric and not in school, only matric, any post-school qualification) and by age group (15-24 and 25-34). The rise in NEET rates during and after the COVID-19 pandemic, compared to the pre-pandemic period 2014 to 2019, is visible for recent matriculants (matric only) aged 15-24 in Figure 4a. For youth aged 25-34, the rise in NEET rates at the start of the pandemic is particularly notable across all education levels as shown in Figure 4b. By the start of 2024, NEET rates for these older youth had not returned to pre-pandemic levels.

4.2.4 Regional variation in NEET rates

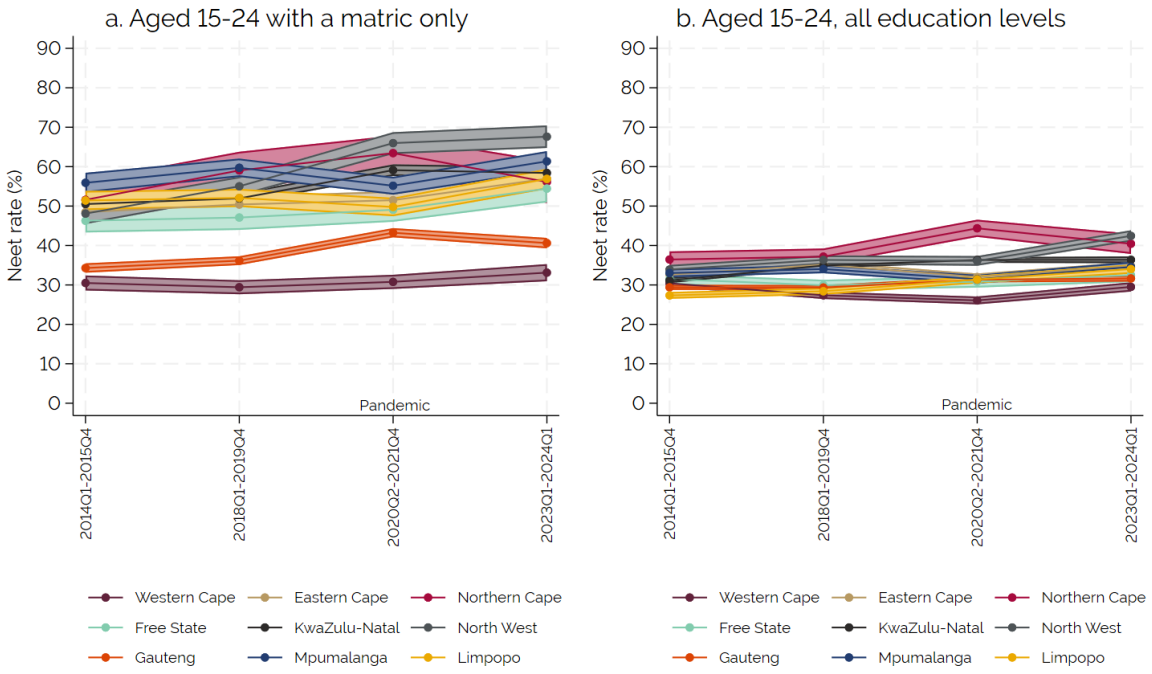
There are also very significant regional variations in the likelihood of recent matriculants and youth overall being NEET, depending on the province in which they reside. Recent matriculants are notably less likely to be NEET if they live in the Western Cape or Gauteng provinces, as shown in panel a of Figure 5. In 2023/24, for example, about a third of recent matriculants in the Western Cape and 41% in Gauteng were NEET, compared to 61% of their peers in Mpumalanga and two-thirds (68%) of their peers in the North West Province. During the pandemic, changes in NEET rates varied across provinces, and recovery has not been uniform across the country.

Figure 4: Trends in NEET rates for youth aged 15-24 and aged 25-34 by educational status, 2014-2024, QLFS quarters 1 to 4 (excluding learners still completing schooling)



Data source: QLFS Q1 2014- Q1 2024, author's own calculations. Notes: Estimates are weighted using sampling weights and standard errors (in parentheses) are adjusted for the complex survey design. Notes: Shaded areas show 95% confidence intervals. Matrics are those with 12 completed years of education.

Figure 5: NEET rates for youth aged 15-24 by province, QLFS



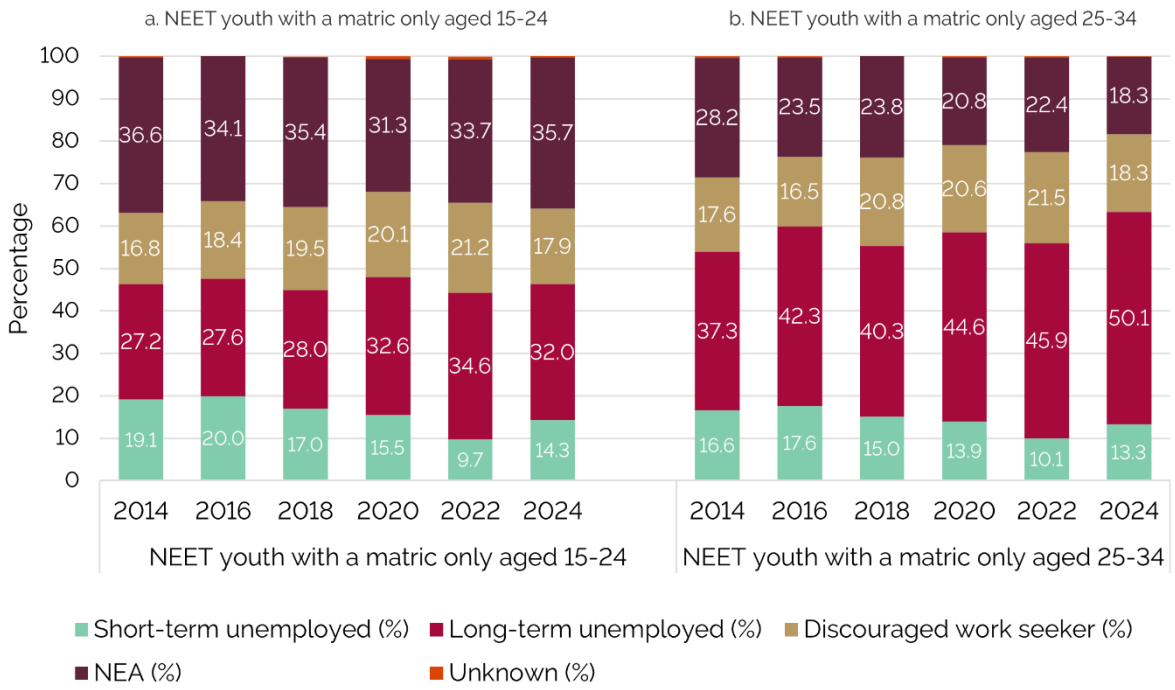
Data source: QLFS Q1 2014-Q4 2015; Q1 2018 – Q4 2019; Q2 2020 – Q4 2021; Q1 2023 – Q1 2024, weighted and standard errors account for complex survey weighting. Notes: Shaded areas show 95% confidence intervals. Matrics are those with 12 completed years of completed education.

4.2.5 Deteriorating labour market conditions for matriculants who are NEET

Not only are recent matriculants more likely to find themselves as NEET in recent years, but this position has become an increasingly vulnerable one as labour market conditions have deteriorated (Mudiriza & De Lannoy 2023).

Alongside the rise in NEET rates among recent matriculants — increasing from 44.6% in Q1 2014, to peak at 55% in Q1 2022, and then declining slightly to 49.8% in Q1 2024 — those recent matriculants who are NEET are now more likely to find themselves among the long-term unemployed. This trend is shown in Figure 6 (more detailed data is provided in Table A 2 of the appendix). In 2014, 27.2% of NEET youth aged 15-24 with a matric had been searching for work for over a year. By Q1 2020, this had increased to nearly 33%, further rising to 34.6% in Q1 2022, and remained statistically significantly elevated at 32% in Q1 2024 when compared to 2014. The decline in labour market conditions is even more severe among 25-34-year-old NEETs with only a matric, where the proportion searching for work for over a year increased from 37% in Q1 2014 to 50% in Q1 2024 (see panel b of Figure 6).

Figure 6: Labour market status of youth aged 15-24 and 25-34 with a matric only who are NEET, QLFS 2014-2024, quarter 1



Data source: QLFS, quarter 1, author's own calculations. Notes: Estimates are weighted. Matrics are those with 12 years of completed years of education.

4.2.6 Limits of cross-sectional data for exploring youth NEET rates

A limit of the preceding analyses is that it has failed to show how youth transition into and out of the NEET state over time. Statistics South Africa's household surveys cannot be used to identify youth transitions for periods longer than a year, limiting a dynamic view of post-school transitions.

However, the SALDRU team at the University of Cape Town, through their work with the longitudinal National Income Dynamics Study (NIDS), have provided a more dynamic view of youth transitions into and out of NEET status in a pre-pandemic context. Branson et al (2019, p15-16) mapped how youth in South Africa aged 15-35 move into and out of NEET states over a ten-year period from 2008 to 2017 when these youth were last observed in NIDS wave 5. Among a balanced panel sample of youth with a matric in 2008, 53% were NEET and 47% were not NEET in 2008. Ten years later, 8% of these matriculants had been persistently NEET, while 25% had never been NEET. The most common pattern was for youth to move in and out of NEET status, with two-thirds (67%) of matriculants being NEET at some point during the ten-year period. Most (63%) spent one or two periods as NEET across five waves of data collection. This suggests that cross-sectional NEET estimates — such as those presented earlier using the QLFS — underestimate the true extent of the NEET issue in South Africa.

Branson et al.'s (2019, p15-16) analysis of NIDS also reveals worse post-school transitions for those without a matric compared to those with a matric. Non-matriculants had higher initial NEET rates (64% vs. 53% for matriculants) and were more likely to experience persistent NEET status (19% vs. 8%). Additionally, they were less likely to remain never NEET (12% vs. 25%). Non-matriculants were also more likely to appear as NEET for multiple periods than matriculants who entered NEET status at some point.[65]

4.3 Declining employment prospects over the past decade

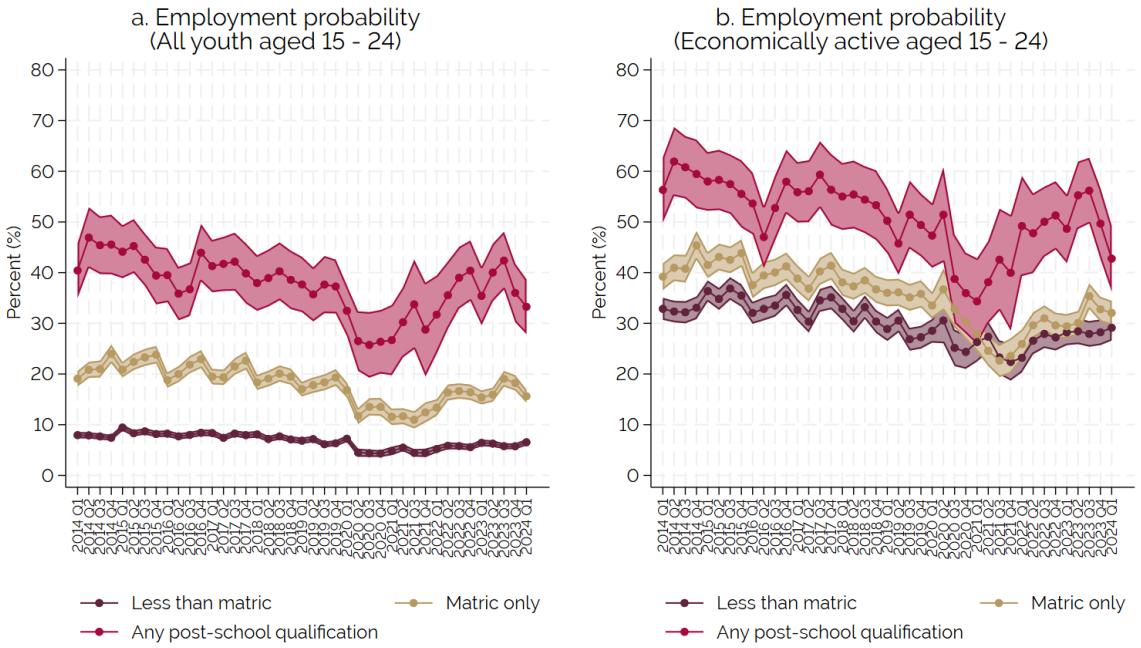
Economic conditions and the structure of the labour market have a bearing on youth's chances of securing employment. When an economy is in a slump or not growing fast enough (a situation of low aggregate demand), efforts to better prepare youth for the labour market may not lead to substantial short-term improvements in overall youth employment. South Africa's already challenging economic conditions that existed pre-pandemic were exacerbated by full and partial lockdowns, which had particularly negative consequences for the labour market opportunities available to youth (Köhler 2023).

This context is crucial when considering the rising share of youth aged 15-24 who are classified as NEET between 2014 and 2024. The increase in NEET rates, particularly among recent matriculants, can be largely attributed to the reduced absorption of this group into the labour market. In Q1 2014, 19% of youth aged 15-24 with a matric were employed (this statistic does not restrict on the economically active). By Q1 2019, this figure had dropped to 17%, and during the strictest lockdown period in Q2 2020, it plummeted to just 11.7%. By early 2024, the likelihood of employment among recent matriculants (not restricting on the economically active) only slightly recovered, reaching 15.6%, still well below pre-pandemic levels and statistically significantly lower than the estimate in Q1 2014 (see Figure 7).

When focusing on the economically active but including discouraged work seekers in panel b of Figure 7, similar patterns emerge. Between 2014 and just before the pandemic, the probability of employment for recent matriculants significantly declined. The probability of employment for recent matriculants then dropped sharply during the pandemic, with a slow and only partial recovery thereafter. By early 2024, employment probabilities for youth aged 15-24 with a matric had not returned to the levels seen between 2014 and 2018. For example, about 3 of every 10 economically active recent matriculants were employed at the start of 2024 compared to closer to 4 of every 10 economically active recent matriculants between 2014 and 2018.

[65] Branson et al. (2019) also identify significant inequalities related to being persistently NEET over a ten-year period. This NEET group is more likely to be female, come from less-educated families, and have attended less resourced schools (Quintile 1-3) compared to peers who were sometimes or never NEET (Branson et al. 2019, p26).

Figure 7: Percent of youth aged 15-24 that are employed by education status, QLFS 2014 quarter 1 - 2024 quarter 1

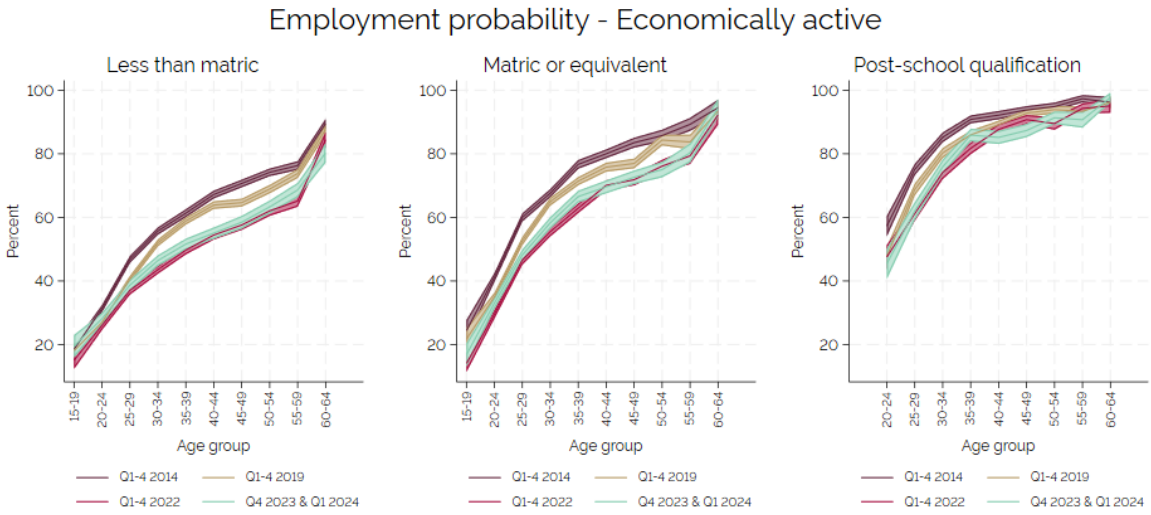


Data source: QLFS, weighted and standard errors account for complex survey weighting. Notes: Shaded areas reflect 95% confidence intervals. Matrics are those with 12 completed years of education. Sample aged 15-24. The economically active in panel b include discouraged work seekers.

Employment probability declines over the ten-year period in review are not isolated to recent matriculants. For nearly all age groups and education levels, employment probabilities in 2023/24 were lower than in 2014, and to a lesser extent, 2019. Figure 8 further illustrates this, showing employment probabilities for the economically active (including discouraged work-seekers) working-age population in five-year age groups across four periods: Q1-Q4 of 2014, Q1-Q4 of 2019, Q1-Q4 of 2022, and Q4 2023 to Q1 2024. Alarmingly, in 2023/24 the employment probability age profile for those with a matric resembled the profile of individuals with less than a matric a decade ago.

Alarmingly, in 2023/24 the employment probability age profile for those with a matric resembled the profile of individuals with less than a matric a decade ago.

Figure 8: Employment probabilities by age and education status for the economically active (including discouraged work seekers) in selected periods



Source: QLFS, weighted and confidence intervals account for complex survey design.
Notes: Sample excludes not economically active but includes discouraged worker seekers.

4.4 PSET enrolment trends among youth

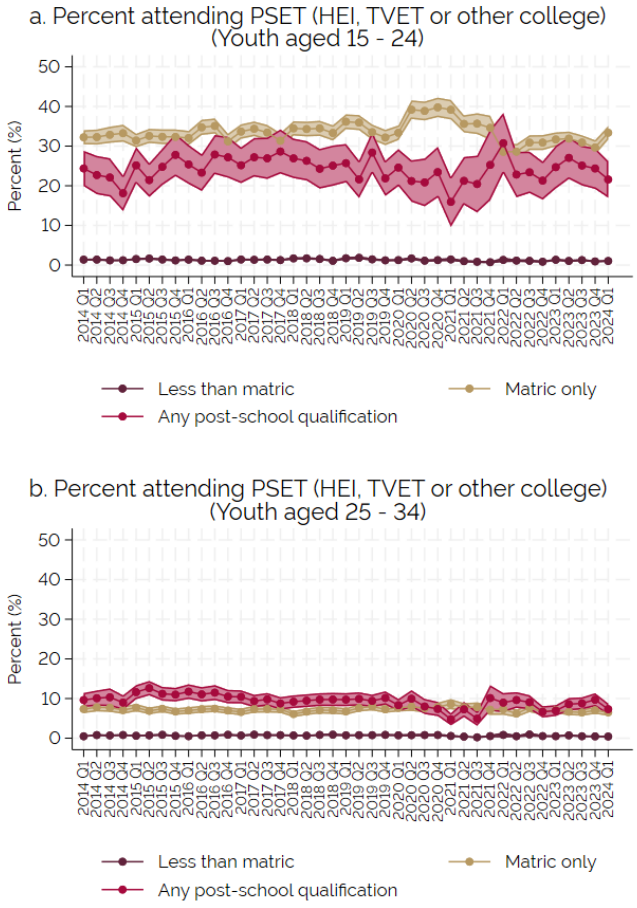
Although the post-school education and training (PSET) system absorbs a larger proportion of youth aged 15-24 than the labour market, there has been insufficient growth in the PSET system, at least since 2015, to appreciably raise the relative share of youth in post-school education.

The overwhelming pattern observed is that between 2014 and 2024 there has been not much improvement in the proportion of youth aged 15-24 enrolled in PSET — either in a private or public higher education institution (HEI) or in private or public Technical Vocational Education and Training (TVET) college or 'other colleges'. While 10.4% of youth aged 15-24 were in the PSET system in quarter 1 of 2014, this had increased only 2.7 percentage points to 13.1% in quarter 1 of 2024 but growth was stagnant between 2018 and 2024. Growth in participation rates from 2014 is less evident and insignificant using quarter 4 data (at 9.35% in quarter 4 of 2014 and 10.48% in quarter 4 of 2023 with overlapping confidence intervals). In absolute terms the numbers of 15–24-year-olds in PSET (in the QLFS) has increased from about 1,06 million in quarter 1 of 2014 to 1,34 million in quarter 1 of 2024, a rise of almost 282,000. But this absolute increase was about a third the size of the increase in numbers of matriculants aged 15-24 over the same period identified in the QLFS.

The QLFS data, as seen in Figure 9. shows that the percentage of youth aged 15-24 with a matric in the PSET system fluctuated between 31-36% from 2014-2019, temporarily increased in 2020 to around 39%, and by Q1 2024 had returned to a level of 33.4% last seen in the years 2014-2016 (see Figure 9a). PSET participation rates are lower among youth aged 25-34 with a matric, and these rates remained quite steady between 2014 and 2024.

The limited growth in PSET enrolment rates from 2014 to 2022 are roughly consistent with the findings of Kruger in chapter 5, who identifies that after an earlier period of growth in the total PSET absorption rate[66] from 32.5% in 2010 to 42.6% in 2015, it didn't change much from 2015 (42.6%) to 2022 (41.1%). Figure 9 also highlights again the consistently low percentages of those with less than a matric that have furthered their education in PSET institutions. Although estimates from the QLFS imply a rise in the percent of 15–24-year-olds attending PSET from 2020 to 2021, this appears inconsistent with the broader findings in Kruger (in chapter 5) using administrative data and may reflect changes to survey response rates and mode of survey during the pandemic. This reinforces the importance of using both household survey and administrative data to analyse PSET trends.

Figure 9: Percent attending PSET, youth aged 15-24 and 25-34 by education status, QLFS 2014 quarter 1 - 2024 quarter 1



Data source: QLFS, author's own calculations. Notes: Weighted using sampling weights and standard errors account for complex survey weighting. Shaded areas show 95% confidence intervals. Matrics are those with 12 completed years of education. HEI = Higher Education Institution. TVET = Technical Vocational Education and Training. The HEIs, TVETs or other colleges may be public or private institutions.

[66] Absorption (or gross enrolment) rates are calculated as headcount enrolments relative to the population aged 18 to 22.

Both household and administrative data sources suggest that since 2015 there has been insufficient growth in PSET enrolment to sufficiently accommodate the rising numbers of youth with a matric in PSET opportunities.

As Kruger reflects in chapter 5, estimated trends until 2026/27 in per learner funding imply that it will be impossible to expand places in PSET in line with what is needed to respond to the aspirations of youth and the needs of the economy, or to improve quality in the PSET sector. This is a concern in lieu of the significant growth observed in the number of youth who are passing matric and passing with a bachelors pass, as discussed in Selkirk & Wills in chapter 2. An earlier study by Branson (2018, p12) that examines post-school transitions from 2011 to 2016 finds that "increasing the matriculation rate has not directly translated into a one-for-one increase in PSET enrolment".

Extending this analysis, Table 6, compares annual average growth rates in NSC numbers against annual average growth in total PSET enrolments, first-time entering undergraduate enrolments in public higher education institutions, and population (aged 20-24) numbers. A log-linear growth model is used to calculate growth rates. [67]

Between 2010 and 2015 — a time of growth in the PSET system — average annual growth in total PSET enrolment (including in private and public HEIs, TVETS and CETs) was about 6%. This outstripped the average annual growth in NSC passes, and almost kept pace with growth in NSC bachelor passes. Despite average annual declines in total PSET enrolment between 2015 and 2020, the average annual growth of 4.7% in the number of first-time entering undergraduate students in public HEIs roughly kept pace with the 5% average annual growth in the number of NSC bachelor passes over the same period, and outpaced the average annual growth of -1.1% in the number of NSC (matric) passes.

However, during and post-COVID-19, the annual average growth rate in the number of NSC bachelor passes rose dramatically to almost 15% each between 2020 and 2022, with a total of 278,814 full-time NSC bachelor passes in 2022. Similar annual average growth rates were observed in full-time NSC pass numbers over the period, with numbers reaching 580,556 in 2022. By contrast, in 2022 there were just 198,730 first-time entering undergraduate students in public HEIs, and the average annual growth rate from 2020 to 2022 in first-time entering undergraduate students in public HEIs was -3.2%. Total PSET enrolment between 2020 and 2022 only grew by 0.9%.

It is clear from both household and administrative data sources that since 2015, there has been insufficient growth in PSET enrolment in HEIs, TVETs and CETs to appreciably accommodate the rising numbers of youth with a matric in PSET opportunities. Kruger (in

[67] Standard compound growth rate formulae have the disadvantage that they tend to be highly sensitive to the chosen start and end points of a data series and are sensitive to extreme observations that can occur between those points. A preferred method is to estimate average annual growth rates by fitting a simple linear regression trend line to the logarithmic value of the underlying indicator over the period in question.

chapter 5) does, however, point out that there has been significant growth in enrolments in private colleges, but off a low base relative to enrolment needs.

Table 6: Average annual growth rates in headcounts in public HEIs, in PSET total enrolment, in NSC numbers and in population numbers

Year	Headcounts in public HEIs *(DHET statistics)*			PSET total enrolment *(DHET statistics)*	NSC numbers		Population aged 20-24
	FTEN undergraduate headcount in PHEIs	Undergraduate headcount in PHEIs	Total headcount PHEIs		NSC (matric) pass numbers	NSC Bachelor pass numbers	
2010 - 2015	-0.4%	1.8%	1.8%	6.0%	4.6%	6.7%	-0.8%
2015 - 2020	4.7%	3.2%	2.5%	-1.9%	-1.1%	5.0%	-1.7%
2020 - 2022	-3.2%	-0.5%	-0.8%	0.9%	14.8%	15.0%	-1.9%
2015 - 2022	1.8%	2.2%	1.5%	-1.7%	3.6%	8.6%	-1.8%
2010 - 2022	1.5%	1.9%	1.6%	1.1%	2.9%	6.1%	-1.4%

Source: Total headcounts, first-time entering undergraduate and undergraduate headcounts from PowerHeda (Heda = Higher Education Data Analyzer, https://www.heda.co.za/PowerHEDA/dashboard.aspx), accessed October 2024). PSET total enrolment (excluding enrolment in SETAs) from 2010-2015 from Table 2, DHET (2018) report on "Investment trends in post-school education and training in South Africa". PSET totals for 2016, 2020 and 2021 from other DHET reports. PSET totals for 2017-2019 and 2022 from Kruger (chapter 5).
Notes:
1) Average annual growth rates estimated via log-linear ordinary least squares.
2) A first-time entering undergraduate student is defined as a person who is (a) registered for an undergraduate or pre-diplomate course, and (b) has not registered in any HEI in the past. Under the field code "entrance category" these students are identified as "First-time entering student" and as "Under Graduate" in the field list "Qualification Type PG_UG".
3) DHET (2022) refer to "undergraduate students" as students who have enrolled in a bachelor's degree, BTech, Diploma (including advanced Diploma), Higher Certificate, Advanced Certificate and Post-Graduate Certificate in Education. It includes students enrolled in professional bachelor's degrees such as BSc (Engineering) and MBChB), which are those that have an approved formal time of three or more years.
4) Population aged 20-24 obtained from the 2024 mid-year population estimates release by Statistics South Africa (https://www.statssa.gov.za/?page_id=1854&PPN=P0302&SCH=73952)
5) PHEI = public higher institution.
6) PSET total enrolment includes enrolments in higher education institutions, TVET, CET and sometimes AET centres and includes private and public enrolments.

5 DISCUSSION

The rising rates of school completion, as discussed in chapter 2, have coincided with an increasing proportion of recent matriculants who are classified as 'Not in Employment, Education, or Training' (NEET). Prior to the COVID-19 pandemic (2014-2019), around 44-45% of recent matriculants were NEET. However, this proportion rose to 47.5% in Q1 2021, peaked at 55% in early 2022, and remained high at about 49.8% in Q1 2024. This trend mirrors the overall increase in NEET rates among youth aged 15-24, which rose from 32.2% in Q1 2014 to 35.4% in Q1 2024. However, these cross-sectional NEET estimates from the Quarterly Labour Force Survey (QLFS) may underestimate the true scale of the NEET problem in South Africa. Longitudinal studies (Branson 2018; Branson et al. 2019) highlight that the NEET issue is more persistent and complex than what cross-sectional data suggests.

Despite the limitations of cross-sectional data, the analysis in this chapter emphasises the growing vulnerability of NEET youth in South Africa. Recent matriculants who find themselves in the NEET category in 2024 are in a more precarious position than matric NEETs in 2014. Not only have NEET rates risen among this group, but those who are NEET are also increasingly likely to remain unemployed for extended periods. This presents significant consequences for both the individuals affected, and society as a whole. A key challenge for South Africa is reducing the duration of unemployment among youth and all job seekers. Prolonged unemployment negatively impacts the likelihood of individuals being hired, as it affects how prospective employers perceive their productivity. Additionally, extended periods of unemployment can harm the self-esteem and mental health of job seekers (Branson et al. 2019; Gariépy, et al. 2022). These effects can create broader societal challenges. To address this, NEET youth need to be re-engaged in productive activities such as training, community projects, or other developmental opportunities (Mlanthseni & Ranchhod, 2017).

While NEET rates have grown among recent matriculants, the analysis also highlights that having a matric still offers some protection against being NEET. At the start of 2024, while almost 5 out of 10 youth aged 15-24 with a matric only were NEET, 8 out of 10 of their peers who dropped out of school were NEET.

The literature review and analysis presented in this chapter point to the deteriorating labour market conditions for youth generally, and matriculants specifically, as a key factor behind the rising NEET rates. As the economy has struggled to grow — worsened by the pandemic — the ability of the labour market to absorb youth into employment has weakened. The employment probability age profile of those with a matric or equivalent in 2023/2024 resembles the employment probability age profile of those with less than a matric a decade ago. Studies documenting the decline in employment probabilities in the labour market in the past decade and even further back to the Global Financial Crisis (Köhler 2023, Köhler 2024; Yu & Adams 2022) are aligned with the findings in this chapter, which show that youth and recent matriculants have faced increasingly bleak prospects in the labour market. These findings contribute to the growing body of research on the NEET issue in South Africa (Branson 2018; Branson et al. 2019; De Lannoy et al. 2020; Mudiriza & De Lannoy 2023).

Declining labour market outcomes have been observed among recent matriculants and youth despite the implementation of Active Labour Market Policies and large-scale youth employment programs. The Presidential Employment Stimulus, introduced from October 2020 was extensive, costing R42 billion and creating nearly 1.8 million temporary jobs between October 2020 and December 2023. Of these jobs, 1.12 million were created in Basic Education through the Basic Education Employment Initiative (BEEI) (The Presidency 2024)[68], which had a highly equitable spatial footprint reaching even the most remote and

[68] In 2023, 1,5 million young people applied for the 250,000 School Assistant posts. This implies that more than one out of every four unemployed youth in the whole country applied for this program (The Presidency 2024, p6).

marginalised communities. Despite these successes and calls for expanding the Expanded Public Works Programme (EPWP) and related job creation initiatives (Donaldson 2022), survey evidence suggests that government job creation programmes such as the EPWP appear to have had limited reach in providing work opportunities for recent matriculants (Statistics South Africa 2022, p57).[69]

Amidst South Africa's NEET crisis, pathways into PSET should be encouraged, particularly as South Africa's PSET participation rates among youth are increasingly lagging behind other middle-income countries, as discussed in the next chapter by Kruger. It is quite apparent from existing literature and this chapter's analysis that employment prospects are substantially higher for individuals with post-school qualifications compared to those with a matric. Recent research by Köhler (2024) adds impetus for improved access to PSET opportunities, as the returns to having a post-school qualification have increasingly outstripped the returns to a matric. This is indicative of the rising demand for workers with post-school qualifications, which has outpaced supply.

Yet, findings in this chapter identify limited growth in the proportion of youth aged 15-24 enrolled in PSET - either in public or private higher education institutions, TVETs or other colleges - in the past decade. Furthermore, opportunities for matriculants to improve their qualification levels in the PSET system are looking increasingly restricted in the short- to medium-term as budget constraints limit expansion in the PSET system, as will be discussed further in the next chapter.

6 CONCLUSION

In conclusion, this chapter highlights the urgent need for South Africa to address the growing NEET problem and the challenges faced by recent matriculants in transitioning to the labour market or further education. The rise in NEET rates is likely related to a complex interplay of economic factors, limited post-school opportunities, and potential mismatches between the skills of youth and the demands of the labour market. To tackle these challenges, there needs to be a concerted effort to expand PSET opportunities, improve the alignment of education with labour market needs, and create more robust pathways for youth to transition from education into meaningful employment. But undergirding the need for PSET growth and more jobs is the pressing issue of economic growth. Without this, overcoming financial budget constraints in the PSET sector and demand-side constraints in the labour market will not be possible.

[69] According to a study by Statistics South Africa, in 2022, only 22.5% of participants in job creation programs like the EPWP had a matric, while the majority—72.9%—had less than a matric. Furthermore, only 37% of participants in these programs were aged 15-34 (Statistics South Africa 2022, p57).

7 REFERENCES

Bjerk, D. 2012. Re-examining the impact of dropping out on criminal and labour outcomes in early adulthood. *Economics of Education Review*, 31 (1), p110-122.

Barro, R.J. .2013. Education and Economic Growth. *Annals of Economics and Finance,* 14-2(A), p277–304.

Branson, N. & Kahn, A. 2016. The post matriculation enrolment decision: Do public colleges provide students with a viable alternative? Evidence from the first four waves of the National Income Dynamics Study. Cape Town: Southern Africa Labour and Development Research Unit, University of Cape Town. (SALDRU Working Paper 182).

Branson, N. 2018. An analysis of out of school youth who have not completed matric: what can available data tell us? SALDRU Working Paper No. 232. Cape Town: SALDRU, UCT.

Branson, N., De Lannoy, A. & Kahn, A., 2019. Exploring the transitions and well-being of young people who leave school before completing secondary education in South Africa. SALDRU Working Paper 244 / NIDS Discussion Paper 2019/11. University of Cape Town.

Branson, N. 2020. Thinking about data for the measurement of post-school education in South Africa. Presentation for the Siyaphambili Webinar series, 28 October 2020. SALDRU, University of Cape Town. https://www.saldru.uct.ac.za/wp-content/uploads/Thinking-about-data-for-the-measurement-of-post-school-education-in-South-Africa.pdf

Branson, N., Culligan, S. & Ingle, K. 2020. Developing Siyaphambili: A stronger South Africa Nation Website. Moving towards a unified goal to combat inequality and unemployment. SALDRU report 20/01. Cape Town: SALDRU, UCT.

Branson, N., & Lam, D. 2021, November 18. The Economics of Education in South Africa. *The Oxford Handbook of the South African Economy.* https://doi.org/10.1093/oxfordhb/9780192894199.013.31

Burger, R. & Teal, F. 2016. Convexity or Heterogeneity? Estimates of the shape of the earnings profile. REDI3x3 Working paper 53. https://www.redi3x3.org/sites/default/files/Burger%20and%20Teal%202019%20REDI3x3%20Working%20Paper%2053%20Convexity%20or%20heterogeneity.pdf

De Lannoy, A., Graham, L., Patel, L. & Leibbrandt, M. 2020. Why is youth unemployment so intractable in South Africa? A synthesis of evidence at the micro-level. *Journal of Applied Youth Studies,* 3, p115-131.

De Witte, K., Cabus, S., Thyssen, G., Groot, W., & Maassen van den Brink, H. 2013. A critical review of the literature on school dropout. *Education Research Review*, 10, p13-28.

Department of Basic Education (DBE). 2024. Review of progress in the basic education sector to 2024. Analysis of key statistics. Pretoria: Department of Basic Education.

Department of Higher Education and training (DHET), 2018. Investment trends in post-school education and training in South Africa. Pretoria: Department of Higher Education and Training.

Donaldson, A. 2022. Public employment programmes: what they contribute to jobs and earnings. Econ 3x3. Available: https://www.econ3x3.org/article/public-employment-programmes-what-they-contribute-jobs-and-earnings

Gariépy, G., Danna, S.M., Hawke, L., Henderson, J & Iyer, S. 2022. The mental health of young people who are not in education, employment, or training: a systematic review and meta-analysis. *Soc Psychiatry Psychiatr Epidemiol,* 57, p1107–1121. https://doi.org/10.1007/s00127-021-02212-8

Hanushek, E.A. & Wößmann, L. 2010, Education and Economic Growth. In: Peterson, P., Baker, E. McGaw, B. (Editors), *International Encyclopedia of Education*. 2, p245-252. Oxford: Elsevier

Henry, K.L., Knight, K.E. & Thornberry, T. 2012. School disengagement as a predictor of dropout, delinquency, and problem substance use during adolescence and early adulthood. *Journal of Youth and Adolescence*, 41 (2), p156-166.

Ingle, K., & Mlatsheni, C. 2017. The extent of churn in the South African youth labour market: Evidence from NIDS 2008-2015. Cape Town: SALDRU, UCT. (SALDRU Working Paper Number 201/ NIDS Discussion Paper 2016/17)

Keswell, M. & Poswell, L. 2004. Returns To Education In South Africa: A Retrospective Sensitivity Analysis of the Available Evidence, *South African Journal of Economics, Economic Society of South Africa,* 72(4), p834-860.

Khuluvhe, M. & Ganyaupfu, E.M. 2023. Access to Tertiary Education: Country Comparison Using Gross Enrolment Ratio. Department of Higher Education and Training, Pretoria

Köhler, T. 2023. What we know about COVID-19 and the South African labour market. Research Note for the COVID-Generation project. Stellenbosch: Research on Socio-Economic Policy (RESEP), Stellenbosch University. Available: https://resep.sun.ac.za/wp-content/uploads/2023/08/2023-08-11-Kholer-COVID-and-labour-market_WEBSITE.pdf

Köhler, T. 2024. A Paradox of Progress: Rising Education and Unequal Labour Market Returns in Post-Apartheid South Africa. COVID-Generation Working Paper. Stellenbosch: Research on Socio-Economic Policy, Stellenbosch University.

Kruger, J. 2024. Spending and Budget Trends in the South African Post-School Education and Training Sector. Note 15, Teacher Demographic Dividend project (August 2024). Stellenbosch: Research on Socio-Economic Policy, Stellenbosch University.

Lund, C., et al. 2018. Social determinants of mental disorders and the Sustainable Development Goals: A systematic review of reviews. *Lancet Psychiatry,* 5, p357-69.

Mlatsheni, C & Ranchhod, V. 2017. Youth Labour Market Dynamics in South Africa: Evidence from NIDS 1-2- 3. REDI3x3 Working paper no. 39.

Moses, E., van der Berg, S. & Rich, K. 2017. A society divided: How unequal education quality limits social mobility in South Africa. Synthesis report for the Programme to Support Pro-Poor Policy Development (PSPPD). Stellenbosch: Research on Socio-Economic Policy, Stellenbosch University.

Mudiriza, G., Grotte, J., De Lannoy, A., David, A., & Leibbrandt, M. 2023. Developing a Youth Labour Market Index for South Africa at the sub-national level., SALDRU Working Paper Number 297. Cape Town: SALDRU, UCT

Mudiriza, G., & De Lannoy, A. 2023. Profile of young people not in employment, education or training (NEET) aged 15-24 years in South Africa: an annual update. Cape Town: Southern Africa Labour and Development Research Unit, University of Cape Town. (SALDRU Working Paper Number 298)

National Planning Commission, 2017. Youth Labour Market Transitions. National Planning Commission.

National Treasury, Republic of South Africa. 2024. Medium Term Budget Policy Statement (MTBPS) 2024. Pretoria: National Treasury.

Rees, 1986. An essay on youth joblessness. *Journal of Economic Literature*, 24(2), p613-628.

Salisbury, T. 2016. Education and inequality in South Africa: Returns to schooling in the post-apartheid era. *International Journal of Educational Development,* 46, p43-52

Statistics South Africa, 2022. Labour Market Dynamics in South Africa. Pretoria: Statistics South Africa.

Statistics South Africa, 2024. Quarterly Labour Force Survey Quarter 1, 2024: Metadata Statistical Release: P0211. Pretoria: Statistics, South Africa.

Statistics South Africa, 2024. Census 2022: A profile of education enrolment, attainment and progression in South Africa. Report no. 03-01-81. Pretoria: Statistics South Africa.

The Presidency, South Africa, 2024. The Presidential Employment Stimulus. Building a society that works. Pretoria: The Presidency.

Van der Berg, S. & Van Broekhuizen, H. 2012. Graduate unemployment in South Africa: A much exaggerated problem. Stellenbosch Economic Working Papers No. 22/12. Stellenbosch: Stellenbosch University.

Van der Berg, S. 2014. Inequality, poverty and prospects for redistribution. *Development Southern Africa*, 31(2), p197-218.

Wills, G. & Qvist, J. 2023. Repetition and dropout in South Africa before, during and after COVID-19. COVID-Generation Research Report. https://resep.sun.ac.za/wp-

content/uploads/2024/01/2023-12-21-Wills_Qvist_covid_dropout_repetition_report_v4_upload.pdf

World Bank. 2019. World Development Report 2019: The Changing Nature of Work. Washington, DC: World Bank. doi:10.1596/978-1-4648-1328-3.

World Bank. 2024. World Development Indicators (WDI) database. [online] available: https://databank.worldbank.org/source/world-development-indicators/Series/SE.TER.ENRR

Yu, D. & Adams, C. 2022. Labour market trends in South Africa in 2009-2019: A lost decade? Stellenbosch Economic Working Papers: WP03/2022. Stellenbosch: Stellenbosch University.

Table A 1: Activities of youth aged 15-24 by education status, quarter 1 of 2014, 2019 and 2024

	Q1 2014					Q1 2019					Q1 2024				
	Less than matric, in school	Less than matric, not in school	Matric only	Post-school quali-fication	Total	Less than matric, in school	Less than matric, not in school	Matric only	Post-school quali-fication	Total	Less than matric, in school	Less than matric, not in school	Matric only	Post-school quali-fication	Total
Ordinary school	99.69	0	4.56	0.62	45.36	99.88	0	3.62	0.22	42.66	99.79	0	2.19	0.13	40.68
	(0.07)	(0.00)	(0.45)	(0.39)	(0.46)	(0.07)	(0.00)	(0.35)	(0.22)	(0.51)	(0.07)	(0.00)	(0.25)	(0.13)	(0.50)
TVET or other college	0	3.18	14.16	10.3	4.96	0	3.91	15.78	9.96	6.16	0	2.89	13.61	6.35	5.64
	(0.00)	(0.31)	(0.66)	(1.44)	(0.21)	(0.00)	(0.42)	(0.69)	(1.61)	(0.25)	(0.00)	(0.37)	(0.62)	(1.17)	(0.24)
Higher Education institution	0	0.49	17.3	11.47	5.16	0	0.67	19.1	13.34	6.53	0	0.15	18.63	13.91	7.12
	(0.00)	(0.18)	(0.73)	(1.73)	(0.22)	(0.00)	(0.20)	(0.76)	(1.96)	(0.26)	(0.00)	(0.11)	(0.70)	(2.08)	(0.27)
Other education	0	1.04	0.2	0.45	0.33	0	1.16	0.1	0	0.31	0	1.86	0.17	0	0.45
	(0.00)	(0.16)	(0.07)	(0.45)	(0.05)	(0.00)	(0.29)	(0.06)	(0.00)	(0.07)	(0.00)	(0.30)	(0.08)	(0.00)	(0.07)
Employed & in education	0.31	0.12	0.89	2.64	0.49	0.12	0.16	1.28	2.41	0.57	0.21	0.08	1.18	1.34	0.57
	(0.07)	(0.05)	(0.19)	(0.95)	(0.07)	(0.07)	(0.09)	(0.22)	(0.84)	(0.08)	(0.07)	(0.06)	(0.19)	(0.53)	(0.08)
Employed & not in education	0	21.08	18.23	37.7	11.51	0	18.38	15.74	35.26	10.55	0	18.5	14.42	31.93	10.18
	(0.00)	(0.80)	(0.77)	(2.74)	(0.32)	(0.00)	(0.81)	(0.70)	(2.76)	(0.32)	(0.00)	(0.87)	(0.64)	(2.72)	(0.32)
NEET	0	74.09	44.66	36.83	32.18	0	75.73	44.38	38.81	33.22	0	76.52	49.8	46.35	35.36
	(0.00)	(0.85)	(0.91)	(2.60)	(0.43)	(0.00)	(0.92)	(0.94)	(2.71)	(0.49)	(0.00)	(0.95)	(0.88)	(2.94)	(0.49)
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
N observations	7544	4138	4131	483	16296	4649	2590	3194	375	10808	5101	2362	3702	362	11527

Data source: QLFS. Notes: Estimates are weighted using sampling weights and standard errors (in parentheses) are adjusted for the complex survey design. Sample includes individuals aged 15-24 with known education status. Matrics are those with 12 completed years of education. Observations with missing education status are excluded from calculation (n = 85, 82, 89).

Table A 2: Labour market status of youth aged 15-24 with a matric only who are NEET, QLFS 2024 Q1

	2014	2016	2018	2020	2022	2024
NEET (%)	44.57	45.28	44.71	46.33	55.08	49.80
	(0.86)	(0.96)	(0.95)	(0.97)	(1.23)	(0.90)
N	1997	1424	1483	1530	1473	1912
Of the NEET group	**2014**	**2016**	**2018**	**2020**	**2022**	**2024**
Short-term unemployed (%)	19.1	20.0	17.0	15.5	9.74	14.3
	(1.02)	(1.15)	(1.03)	(1.02)	(0.89)	(0.87)
Long-term unemployed (%)	27.2	27.6	28.0	32.6	34.6	32.0
	(1.10)	(1.26)	(1.27)	(1.32)	(1.53)	(1.20)
Discouraged work seeker (%)	16.8	18.4	19.5	20.1	21.2	17.9
	(0.85)	(1.13)	(1.13)	(1.13)	(1.22)	(0.96)
Not economically active (%)	36.6	34.1	35.4	31.3	33.7	35.7
	(1.22)	(1.35)	(1.35)	(1.29)	(1.43)	(1.19)
Unknown	0.24	0.00	0.19	0.59	0.73	0.18
	(0.19)	(0.00)	(0.13)	(0.21)	(0.43)	(0.10)
Total (%)	**100**	**100**	**100**	**100**	**100**	**100**
N	1997	1424	1483	1530	1473	1912

Data source: QLFS, author's own calculations. Notes: Estimates are weighted using sampling weights and standard errors (in parentheses) are adjusted for the complex survey design. Matrics are those with 12 completed years of education. Sample aged 15-24.

Table A 3: Labour market status of youth aged 25-34 with a matric only who are NEET, QLFS 2014-2024, quarter 1.

	2014	2016	2018	2020	2022	2024
NEET (%)	38.65	38.7	44.12	44.39	50.29	48.31
	(0.87)	(0.84)	(0.86)	(0.87)	(1.15)	(0.86)
N	4320	3878	3878	3875	2886	3979
	2014	**2016**	**2018**	**2020**	**2022**	**2024**
Short-term unemployed (%)	16.61	17.63	15.03	13.92	10.06	13.28
	(1.00)	(1.05)	(0.92)	(0.90)	(0.88)	(0.79)
Long-term unemployed (%)	37.31	42.27	40.32	44.55	45.89	50.07
	(1.27)	(1.35)	(1.27)	(1.30)	(1.57)	(1.23)
Discouraged work seeker (%)	17.58	16.46	20.84	20.58	21.46	18.26
	(0.97)	(1.03)	(1.06)	(1.07)	(1.18)	(0.94)
NEA (%)	28.16	23.51	23.81	20.81	22.35	18.27
	(1.30)	(1.18)	(1.13)	(1.10)	(1.42)	(0.95)
Don't know (%)	0.34	0.13	0	0.14	0.24	0.12
	0.12	0.09	0	0.1	0.14	0.06
Total (%)	**100**	**100**	**100**	**100**	**100**	**100**
N	1733	1526	1710	1720	1506	1937

Data source: QLFS, author's own calculations. Notes: Estimates are weighted using sampling weights and standard errors (in parentheses) are adjusted for the complex survey design. Matrics are those with 12 completed years of education. Sample aged 25-34.

5 Post-school education and training and youth unemployment

Exploring prospects

John Kruger

ABSTRACT

This chapter asks whether the South African Post-School Education and Training (PSET) sector could make a more significant contribution to productively absorbing South African youth. National planning targets are summarised and compared, indicating that plans saw PSET enrolment expanding from about 1.7 million to 5.1 million between 2010 and 2030, or from 32.5% of youths aged 18-22 to 85.6% and a reshaping of the sector towards a much more important role for vocational education.

Enrolment data is analysed showing that the sector did grow significantly and absorption of youths 18-22 reached 2.2 million by 2015 or about 43% of the age cohort. There was also transformation in the sense of a changing composition of the sector, in terms of gender and population group and faster growth of vocational institutions. The expansion, however, faltered after 2015, and absorption slipped. This may be accounted for by declines in numbers of students enrolled in public Technical Vocational Education and Training (TVET) and Community Education and Training (CET) and slower growth in public universities. The exception was private universities which appeared to grow at double the targeted rate. However, more clarity is needed around the year-on-year comparability of official PSET enrolment numbers, particularly for TVETS and CETs. The South African trajectory in terms of tertiary enrolment is also significantly lagging countries such as China, Brazil and Indonesia.

Given the importance of PSET for supporting growth and contributing to reducing unemployment and inequality, it is imperative for the South African PSET system to grow more rapidly and improve its quality and efficiency. There are, however, significant obstacles to this happening. Fiscal constraints and consolidation, driven by slow growth, supporting ailing state-owned companies and a rapidly growing debt burden, is seeing cuts in real spending in most sectors. In addition, low quality of schooling, inadequate student funding mechanisms, and systemic inefficiencies in both universities and TVET constrain expansion. The country therefore faces a significant strategic challenge to build PSET.

"What the Chinese model shows is that higher education is not just a free path out of poverty into the elite, it must be one of the pillars of socio-economic development with a pact between different role players." (Cloete & Van Schalkwyk 2021, p. 9)

"Policies to encourage broader access to universities are indispensable and crucial in the long run, in the United States and elsewhere. … It would be wrong, however, to imagine that unequal access to higher education is a problem solely in the United States. It is one of the most important problems that social states everywhere must face in the twenty-first century. To date, no country has come up with a truly satisfactory response." (Piketty 2014, p. 318 and 485)

1 INTRODUCTION

Given the high levels of young South Africans not in employment, education or training (NEET), could the post-school education and training system (PSET) play a more significant and stronger role in directly absorbing young people? Could the PSET system play a stronger role in accelerating their absorption into the labour market?

This chapter explores these questions by reviewing four areas. Firstly, an overview is provided of South African plans and expectations for PSET and some of the realities of the situation. To identify what has been achieved relative to these plans, the second section describes recent trends in PSET enrolment in South Africa against planned expectations and population trends. The third section compares PSET developments in South Africa with those of comparator countries. The upshot of recent experience is that South Africa needs to significantly expand the size and quality of its PSET sector. Sections four and five, however, point to substantial obstacles to a rapid and sustainable expansion of this crucial sector which range from economic and fiscal constraints to various systemic issues in different areas of education, including basic education, universities and Technical and Vocational Education and Training (TVET) colleges.

South Africa faces a significant investment and strategy challenge with PSET. To support strong economic development – rapid growth, productive inclusion of its youth and reduction of very high inequality - the country has to expand an effective PSET sector. Financial constraints and sectoral systemic challenges, however, present large obstacles to doing so. Going forward on existing trajectories will not work. There is a need to generate new approaches to expand readiness for post-school education, to finance students and universities and to move to a set of more appropriate and well-supported institutions.

2 PSET PLANS AND REALITIES

South Africa's National Development Plan (NDP) 2030 (South Africa, National Planning Commission (NPC), 2012) targeted a substantial expansion of the Post-School Education and Training System (PSET) sector in terms of student enrolment. These aspirations were spelt out further in sector planning documents (see South Africa, Department of Higher Education and Training (DHET), 2013, 2023). As shown in Table 1 government plans were for expanding PSET enrolments from around 1,7 million in 2010 to about 5.1 million in 2030. This would have required growth in enrolments of an average annual 5.7% per year and would have taken absorption of the 18–22-year-old population by the PSET sector from 32.5% to 85.9% between 2010 and 2030[70].

Table 1: South African actual enrolment (various years) and 2030 enrolment targets[71]

PSET sub-sector	2010	2015	2022	2030 (targets)	Required growth 2010 to 2030 (Ave Annual)
Public Universities	892 936	985 212	1 077 768	1 400 000	2.3%
Private Universities	90 767	130 320	241 667	200 000	4.0%
Public Technical and Vocational Education Colleges	358 393	737 880	518 584	2 500 000	9.5%
Private Colleges	46 822	88 203	71 856	n.a.	n.a.
Community Education and Training	297 491	283 602	130 752	1 000 000	6.2%
Total Post-School Education	1 686 409	2 225 217	2 040 627	5 100 000	5.7%

Source: Actual enrolment data from DHET, Statistics on PSET (various years) using PowerHEDA (IDSC, 2023) and enrolment targets from National Plan for PSET 2021-2030 (South Africa, Department of Higher Education and Training (DHET), 2023). Growth rates calculated.

The plan also implied a substantial change in the composition of enrolments in the sector with university enrolments falling to about 27% of enrolments (from 53%) and Technical and Vocational Education and Training (TVET) college and Community Education and Training (CET) college enrolments rising to 49% and 20% of the total respectively, from 24% and 18%.[72]

[70] Absorption rate calculated by using government targets as per Table 1 and population projections from Johnson and Dorrington (2024).

[71] The National Plan published in 2023 clearly states as targets for universities that "1.6 million students across both public and private higher education institutions" (p.36) and in Figure 3, p.3, gives the public higher education target as 1.6 million and the private target as 0.2 million enrolments. There is, however, some uncertainty about numbers as the NDP (p.319) talks about "increasing enrolment at universities … to about 1.62 million [by 2030]", while the White Paper for PSET of 2013 spoke of "1.6 million in public universities". Branson et al. (2020, p.9) report a NDP 2030 target of 1.6 million in public higher education and 0.2 million private enrolments. Here the decision was to go with the most recent National Plan.

[72] Calculated using data in Table 1.

In addition to the quantitative expansion and a changed composition of the sector, it was clear that substantial improvements in efficiency and quality were needed. The NDP saw this as requiring an increase in the annual output of graduates, shifting the composition of outputs (with an increased proportion of Science, Engineering and Technology students), growing the number of post-graduate enrolments and a substantial increase in the number of PhDs (South Africa, National Planning Commission (NPC), 2012, p. 316-319).

Improved throughput of students was key to the plan. This would depend on three key levers, namely, improving human resources (including the proportion of staff with PhDs and attracting a new generation of young, black academics), expanding facilities (including accommodation) and student support, as well as improving management and quality systems. An increased role was also foreseen for private providers (South Africa, National Planning Commission (NPC), 2012, pp. 319–320).

In the NDP the primary rationale for the PSET strategy and targets was the need to provide more skills and the appropriate skills mix for the economy (South Africa, National Planning Commission (NPC), 2012, p. 316). While youth unemployment is referred to a few times in the NDP (see for example, South Africa, National Planning Commission (NPC), 2012, p. 26), it is not explicitly mentioned in the chapter on education, and the expansion of PSET is not referred to as having a direct bearing on youth unemployment (South Africa, National Planning Commission (NPC), 2012, pp. 296–332).

The *Green Paper for Post-School Education and Training* stated that "expansion should not be driven by an unrealistic desire to create an immediate and short-term lowering of youth unemployment levels, important as this may be." (South Africa, Department of Higher Education and Training (DHET), 2012, p. 19) In the subsequent *White Paper on Post-School Education and Training*, the high number of NEETs are identified in a discussion of the "inadequate quality, quantity and diversity of education and training provision" (South Africa, Department of Higher Education and Training (DHET), 2013, p. 7). However, little specific is said about the role of PSET in absorbing the young unemployed and no basis is provided for the enrolment targets set. However, in addressing a range of issues in PSET, the Minister of Higher Education and Training remarked that "we need to focus our energies and resources on expanding the post-school system to cater for the 3.4-million 15- to 24-year-olds who are not in employment, education or training" (Staff Reporter, 2013).

Government plans were for expanding PSET enrolments from around 1,7 million enrolments in 2010 to about 5.1 million in 2030. This would have…taken absorption of the 18–22-year-old population…from 32.5% to 85.9% between 2010 and 2030.

In line with this view of the Minister, Rogan (2018, p. 1) pointed out, that "much is expected of the PSET sector in South Africa". In the context of high unemployment, and especially youth unemployment, the sector could play a much larger role in absorbing young people while they are preparing for the labour market and could also make a stronger contribution, through appropriate education and training, to young people moving more quickly into better jobs.

This could have significant second-round effects. The provision of more skilled labour could reduce perceived skills shortages and enhance productivity to accelerate growth which could again stimulate the demand for labour. The greater availability of skilled labour is also necessary to drive down the very high and growing skills premium associated with employees with post-school, especially university, education.

A reduced skills premium is important on two counts. Firstly, it will reduce the cost of production and so promote competitiveness and growth. Secondly, the reduced skilled wage premium will reduce inequality, so helping to deal with an important fault line in South African society impacting not only on social stability but on a host of other social phenomena ranging from corruption (Levy et al., 2021; You, 2015) to other social aspects such as health and happiness (Case & Deaton, 2022; Wilkinson & Pickett, 2010).

About the more vocationally oriented component of South Africa's PSET system, the Technical and Vocational Training Colleges, Allais (2024) has confirmed that youth unemployment is one of South Africa's most significant challenges and that more vocationally oriented education is often seen as the solution. Writing more broadly about TVET in Africa, she and Wedekind argue that "the expansion of TVET is seen as solving apparent skills shortages, enhancing productivity, and absorbing a major youth unemployment problem, among many other goals" and that "there is a confluence of both a new commitment to TVET globally, regionally, and nationally, and that this commitment is expressed at various levels through the process of goal setting, usually coupled with targets and indicators that need to be measurable and achievable" (Allais & Wedekind, 2020, p. 325).

Contrary to these high expectations of the potential positive role of PSET in an upward societal spiral, Branson (2018) sees the extent of post-school enrolment as a key element in the current South African "cycle of inequality". "Low and unequal levels of PSET lead to skill shortages", this leads to a high skills premium and low pay for low-skilled workers. This in turn leaves the unskilled in poverty and with limited access to PSET, "and so, the cycle continues". In addition to Branson, the central fact of low tertiary (or PSET) enrolment in South Africa has been remarked on by many (Dessus et al., 2019, p. 32; Filmer & Fox, 2014, p. 241; Rogan, 2018, p. 243; Van der Berg & Hofmeyr, 2018, p. 2).

Beyond the comparatively low enrolment in the university system, success rates and efficiency are also low. In terms of success or output, university graduation rates[73]

[73] Expressed as the number of students who graduated in a particular year, irrespective of the first year of study, divided by the total number of students enrolled at public universities in that particular year.

increased from 19.1% in 2014 to 20.6% in 2019 and then increased by one percentage point in 2020 and stayed at that level in 2021 (Khuluvhe et al., 2024, p. 57). In terms of efficiency, of the 2016 cohort of first-time entering students, 45.6% graduated after four years and just under 69.4% after 6 years. There has, however, been steady improvement from the 2000 cohort when a third graduated after 4 years and 52.9% after six years (Data from South Africa, Department of Higher Education and Training, 2023a, p. Table 3, 19).

Output and efficiency are worse in TVETs, but measures are not directly comparable to the measures for universities. The NDP, quoted in Garisch (2024, p. 8), referred to success rates in TVET as "extremely low". Completion at TVET colleges in 2022 - the proportion of those registered who wrote and passed all required courses - equalled 73.4% for N3, 55.8% for N6 and 61.3% for the NC(V) (South Africa, Department of Higher Education and Training, 2024, Table 5.10). The DHET estimates that only 10.8% of students that enrolled for the NC(V) in 2019 completed their qualification in three years, which was very similar to the rate for the 2017 cohort (Khuluvhe et al., 2024, Table 17).

Given this situation, Rogan (2018, p. 248) concluded pessimistically, that "there is still a long way to go before the PSET system can address, in a meaningful way, either the high levels of inequality in South Africa or the extreme level of youth unemployment".

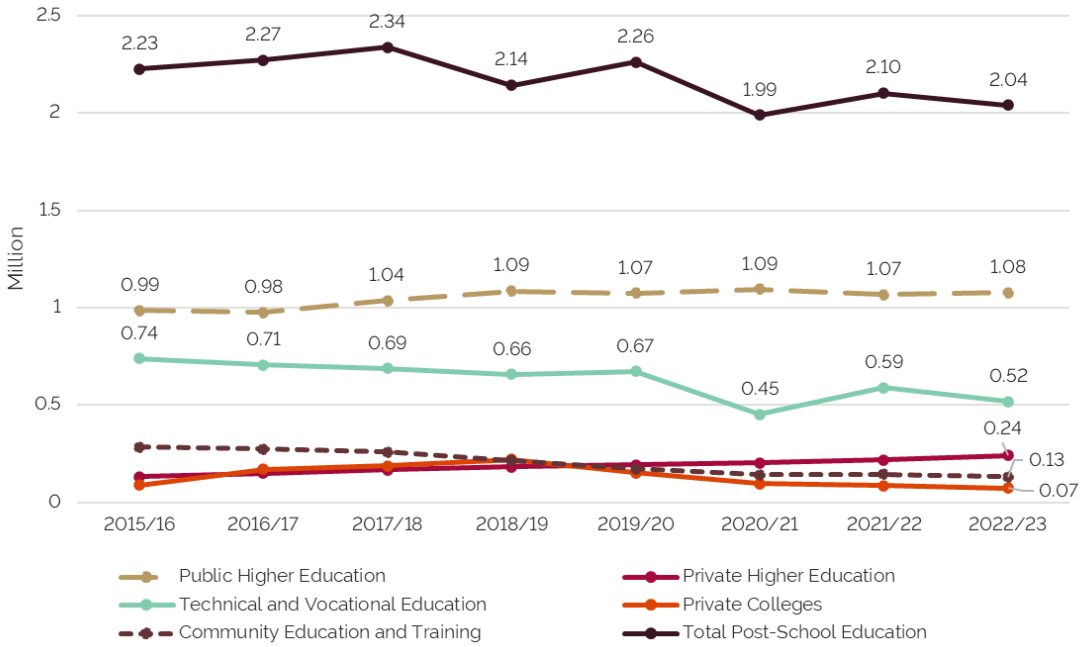
The next section reviews recent trends in enrolment whereafter these trends are put in comparative perspective.

3 RECENT ENROLMENT AND ABSORPTION TRENDS

South Africa in 2022 enrolled just over two million students in post-school education and training (PSET), excluding learners in the skills system as implied by data in Department of Higher Education and Training reports. This compares to a broad target population (those aged 18 to 22) of just under five million (population data from Johnson & Dorrington, 2024). The bulk of enrolments are in public universities (54%), public TVET colleges (25%) and private universities (12%). The rest are in public Community Education and Training (CET) colleges (6%) and private colleges (4%).

The "shape" of the sector, with bigger enrolments in the more academically oriented university sector and lower numbers in TVET and CET, is often referred to as an inappropriately inverted pyramid. A central policy objective is to move towards "rebalancing" to a normal pyramid with a broad base of more vocationally oriented PSET and tertiary education.

Figure 1: PSET headcount enrolment 2015-2022, drawn from DHET statistics



Source: Calculations Department of Higher Education and Training, Statistics on Post-School Education and Training, various years to 2023 and PowerHEDA (https://www.heda.co.za/PowerHEDA/dashboard.aspx). These statistics should be viewed in lieu of trends in PSET enrolment from the Quarterly Labour Force Survey in Appendix Figure 1.

During the initial years of democracy there was significant growth in enrolment in both higher education and vocational education and rebalancing between higher education and vocational education[74]. University enrolments in South Africa expanded from around 578,000 in 1995 to 892,236 in 2010 and was at just under a million in 2015. Headcount numbers in TVET colleges are estimated to have increased from about 271,000 in 2000 to 737,880 in 2015. Therefore, over the twenty years between 1995 and 2015, university enrolment grew by 70% or 2.7% per year[75], while over the 15 years between 2000 and 2015 enrolment in TVET colleges increased by 172%, or an average annual 5.1% per year.[76]

From DHET figures, at face value it appears that this policy-aligned faster growth in colleges came to an end after 2015 as shown in Figure 1. Enrolments in public universities expanded by 9% between 2015 and 2022 to just under 1.1 million students and in private universities by 85% over the same period, from 130,000 to 242,000 students. In contrast, enrolment dropped significantly in TVET colleges, by 30% to 519,000 students, and in CET

[74] Historical data for higher education from Bunting (2006) and for TVET from (South Africa, Presidency, 2014), and for later years from Department of Higher Education and Training (various years).

[75] Growth was fastest in the decade between 2000 and 2010 at around 4% per year on average but fell back between 2010 and 2015 to around 2% per year on average.

76 Less information is available about enrolment at colleges before 2002, the year in which 150 technical colleges were merged into 50 TVET colleges (South African Reserve Bank, 2021).

colleges by 54%. Data coverage of private colleges seem to have fallen, making recently reported numbers for that segment misleading[77].

Taking the DHET numbers at face value, there has been a faltering in moving to the sector goals with enrolments still well below 2030 targets. Because of apparent declining numbers in TVET and CET colleges, overall total PSET enrolments, as implied in DHET reports, dropped from 2.23 million in 2015 to 2.04 million in 2022. DHET reported PSET enrolments in 2022 were at 41.1% of the population aged 18 to 22, relative to the (calculated) White Paper target of 85.9% (see Table 3). In addition, universities have been growing faster than the TVET and CET components after 2015. But caution is also required when interpreting trends in DHET enrolment numbers especially if graduation rates alter, reporting procedures change or the length of course offerings alter overtime.

All components of the sector grew more slowly than rates required by the targets (see Table 2), except for private universities which grew at double the target rate (8.5% against a targeted 4%). Public universities grew at 0.7% points less than targeted per year. Given the rapid growth in private university enrolments over the past 12 years, higher education numbers could surpass the target of 1.6 million enrolments in university by 2030 if private and public university enrolment continue to grow at the rates achieved over the last 12 years.

It appears that the big shortfall in growth has been in TVET colleges and CET colleges based on DHET statistics. While TVET colleges were targeted to grow by just under 10% per year between 2010 and 2030 (see Table 2), numbers grew on average by 3.1% per year to 2022. While TVET numbers more than doubled between 2010 to 2015 (growing an average annual 15.5% per year) they started declining slowly immediately after that, and dropped by more than 200,000 in 2020, the COVID-19 year. By 2022, the TVET sector had recovered only by about 100,000 from the 2020 slump in numbers. CET Colleges were targeted to grow by over 6% per year between 2010 and 2030 but shrank by more than 6% per year.

Table 2: Targeted enrolment growth rates to 2030 and actual growth rates to 2022

PSET sub-sector	Required growth 2010 to 2030 (Ave Annual)	Actual growth 2010 to 2022 using DHET statistics (Ave Annual)
Public Universities	2.3%	1.6%
Private Universities	4.0%	8.5%
Public Technical and Vocational Education Colleges	9.5%	3.1%
Private Colleges	0.0%	3.6%
Community Education and Training	6.2%	-6.6%
Total Post-School Education	5.7%	1.6%

Source: Calculated from DHET, Statistics on PSET (various years), National Plan for PSET 2021-2030 (2030 target for public TVETs include private colleges)

[77] Comparing response rates in South Africa, Department of Higher Education and Training (2023b, p. 133 and 2024, p. 138)

But these enrolment numbers from administrative data should be treated with caution. Total PSET enrolments calculated from household surveys are lower[78] than total DHET enrolments and trends over time are also different (as seen in Appendix Figure 1). A closer look at the Quarterly Labour Force Survey (QLFS) suggests that total PSET enrolment at best marginally grew between quarter 1 of 2015 and quarter 1 of 2022, increasing from 1,72 million to 1,81 million (but this is not a statistically significant increase at the 5% level). Total PSET enrolment rose further to 1,9 million by quarter 1 of 2024 in the QLFS. Marginal growth in PSET totals in the QLFS from 2015 to 2022 has been driven by slightly higher enrolment in a combination of public and private higher education institutions from 2015 (at 925,000) to 2022 (990,000) and rising to 1,12 million by 2024. There were also slightly higher enrolments in public and private "other colleges" at 267,000 in 2015, rising to 340,000 by 2022. But the QLFS suggests no growth and possibly even declines in combined public and private TVET enrolments from 2015 (529,000) to 2022 (481,000), with further declines to 2024 (450,000).

The composition of student enrolment by population group and gender has changed significantly. Between 1995 and 2020, the proportion of students who were African increased from 39% to 78.8% and the proportion of students who are women rose from 46% to 60.8%.[79] Thus, the share of the enrolled who are African is approaching the African population share - 81% according to the 2022 Population Census (Statistics South Africa, 2023).

However, challenges in terms of representativity and equity remain. A much higher proportion of African post-school students (64%) aged 20 to 25 (64%) are enrolled in colleges compared to whites (18%), Indians (24%) and coloureds (50%) (Branson & Lam, 2021, p. 716). Enrolment by population group also differs significantly across universities with, for example, African students making up 22.5% of enrolments at Stellenbosch University, 57.5% at the University of Pretoria and 99.8% at the University of Limpopo (South Africa, Department of Higher Education and Training, 2024). Branson and Lam (2021, p. 716 and 722) also point out that racial gaps remain significant and have in some cases widened. For Africans, the proportion of those who passed matric and also continued to complete a post-secondary qualification dropped from around 40% in 1955 to 20% in 1990 meaning that "the rate of tertiary completion among Africans and Coloureds who reach matric has not kept pace".

The result of recent growth trajectories relative to projected population is given in Table 3. Absorption (or gross enrolment) rates are calculated as headcount enrolments from DHET statistics relative to the population aged 18 to 22. Four aspects of the trend in PSET absorption of young South Africans can be identified:

- The overall PSET absorption rate has increased from 33% to 41% between 2010 and 2022. The positive trend has been assisted by a declining population aged 18-22 up to 2022.

[78] A possible reason for this is that household surveys do not survey students in residences.

[79] See Footnote 71 for data sources.

- Despite this increase over the longer period, the absorption rate declined between 2015 and 2022, from 43% to 41%. The drop in TVET and CET enrolment using DHET statistics in 2020 being the cause of this decline although it is possible that the trends are flatter than this as suggested by QLFS data.
- Continued growth in higher education enrolment, and especially the very rapid growth in private higher education, saw absorption of the young by higher education increasing from 18.9% in 2015 to 26.6%, approaching the range of the 2023 target of 30.3% as in Table 3.
- The overall PSET absorption rate is still far off the 2030 target of around 86% but if the public and private higher education systems can maintain their growth rate over the last 12 years (1.6% and 8.5% respectively per annum), the higher education target enrolments can be reached by 2030 (and the absorption rate of 27% maintained).

This means that PSET over the last two decades has been playing a stronger role in absorbing youth and keeping them out of the NEET category, but that positive trend has slowed or even faltered since 2015. The decline in overall enrolment and absorption is a concern given the high proportion of young people that are NEETs. It also happened at a time of continued strong demand for post-school education driven by high private returns to investment in post-school education. In addition to relatively low access (see next section) demand is also rising because of a birth surge between 2003 to 2005 (South Africa, Department of Basic Education (DBE), 2024, p. 4) moving through the age group over the next decade. This sees a switch from slightly negative population growth of 0.4% per year on average for the 18-22-year-old cohort between 2010 and 2022 to projected growth of 2.3% per year (based on Johnson & Dorrington 2024). As discussed in chapter 2, the numbers of matriculants and matriculants with bachelor passes have also increased rapidly from 2020 adding to the need for extra places. As Table 4 shows, while the first-time entering public higher education students were significantly higher than the number of NSC bachelor passes in 2017 and 2018, the proportion started decreasing in 2019 and fell to 74% by 2022.

Table 3: Absorption of youth into PSET – Actual and 2030 targets (enrolments as a proportion of 18-to-22-year-olds)

	2010	2015	2022	2030 (targets)
Population 18-22	5 182 654	5 219 408	4 963 519	5 936 490
Absorption PSET	32.5%	42.6%	41.1%	85.9%
Absorption Universities +TVET	26.8%	37.2%	38.5%	69.1%
Absorption Universities	19.0%	21.4%	26.6%	27.0%
Absorption Public Universities	17.2%	18.9%	21.7%	23.6%
Absorption Private Universities	1.8%	2.5%	4.9%	3.4%

Calculated from DHET, Statistics on PSET (various years), National Plan for PSET 2021-2030 (2030 target for public TVETs include private colleges) and Johnson and Dorrington (2024), Thembisa Version 4.7. Absorption (or gross enrolment) rates are calculated as headcount enrolments relative to the population aged 18 to 22.

Table 4: First-time entering public higher education students as a proportion of matriculants and bachelor passes

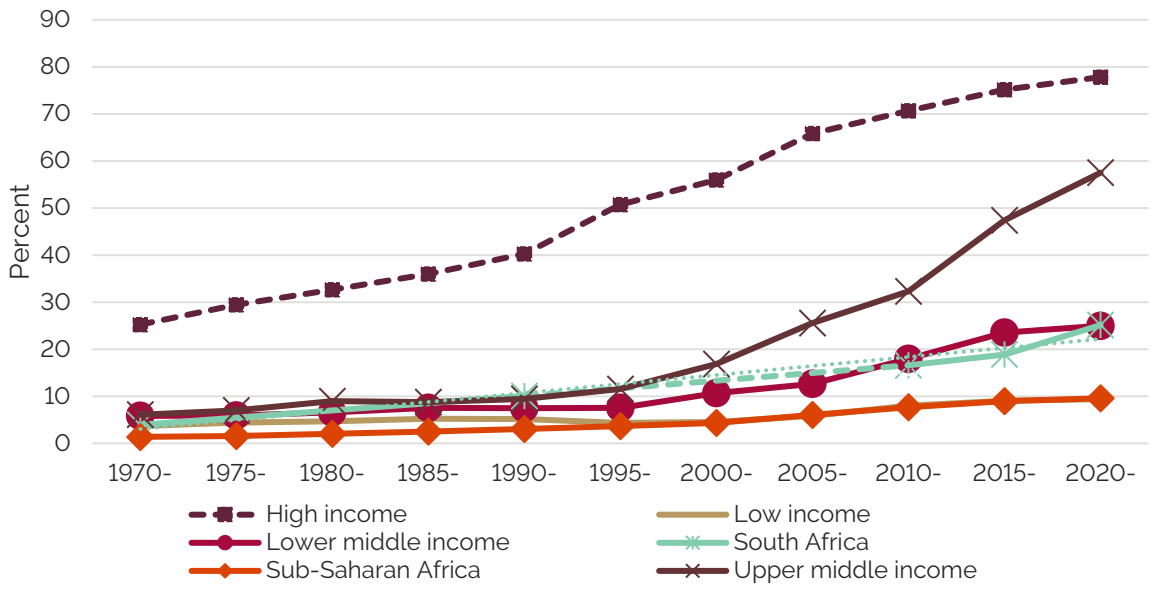
First-time entering Public HE Students a Proportion of:	2015	2016	2017	2018	2019	2020	2021	2022
Matriculants	37%	39%	50%	54%	47%	48%	34%	35%
Bachelor Passes	102%	107%	130%	126%	104%	101%	71%	74%

Source: Calculated from National Senior Certificate data and DHET statistics on PSET (various years).

3.1 Comparative enrolment trends

As pointed out by the DHET in 2023, South Africa's 2020 tertiary[80] gross enrolment rate (GER) lags that of comparator countries (Khuluvhe & Ganyaupfu, 2022, p. 4). While South Africa's GER at the beginning of the 2020s hovered at around a quarter of the relevant age group, several upper-middle-income countries had rates exceeding 40% and even 50%, with India just over 30% and Ghana below 20%.

Figure 2: Comparative tertiary enrolment rates (gross enrolment rates), 1970-2020 (percent of 18-22-year-olds), selected country categories (income level) and South Africa



Source: Data from UNESCO Institute for Statistics (UIS) via World Bank Open Data, April 2024. Data from https://databank.worldbank.org/source/world-development-indicators/Series/SE.TER.ENRR World Bank

In Figure 2 and Figure 3, the South African tertiary enrolment trajectory is compared, firstly, to the average trajectory for country income groups and, secondly, to selected middle-income countries. The data show that after the democratic transformation in 1994, South

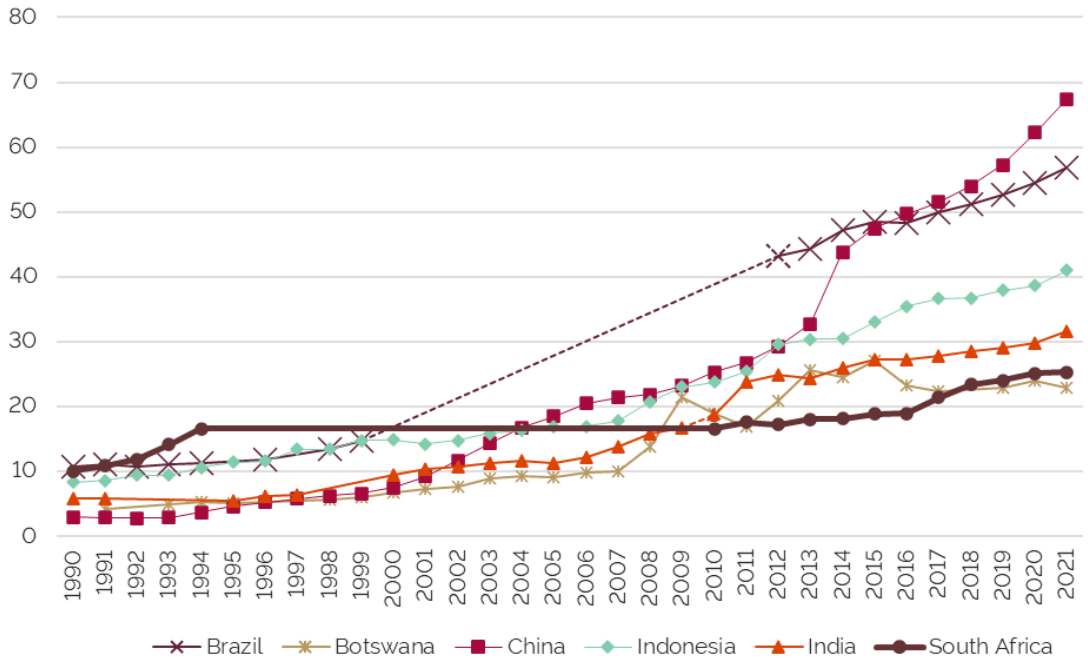
[80] Khuluvhe & Ganyaupfu (2022, p. 3) point out that 'Tertiary [post-school] education includes what is commonly understood as academic education but also includes advanced vocational or professional education. It comprises ISCED level 5 (short-cycle tertiary education) 8, level 6 (Bachelor's or equivalent level), level 7 (Master's or equivalent level) and level 8 (Doctoral or equivalent level).'

Africa failed to expand tertiary education as rapidly as countries of similar income status and now lags these countries significantly.

Compared to PSET enrolment rates in other country income groups (Figure 3) in 1970, South Africa was slightly lagging upper middle-income countries but was on par with lower middle-income countries. By 1990 South Africa had caught up with the middle-income country average and somewhat exceeded the level of lower middle-income countries. By 2010 it had, however, fallen significantly below the upper-middle-income average and drew almost level with lower-middle-income countries. Over the last two decades, South Africa fell further behind the upper-middle-income countries and barely kept up with lower-middle-income countries.

The focus on specific upper-middle-income countries in Figure 3 shows that it is not only the rapid increase in Chinese tertiary enrolment that made South Africa fall behind the upper-middle-income country average. In 1990, South Africa had a low PSET enrolment rate of around 10%, but this was comparable to that of Brazil and Indonesia and more than double that of China, and above that of India. Two decades later, all four these countries, as well as Botswana, had overtaken South Africa. By 2021 South Africa lagged Peru's tertiary GER by 46 percentage points (not in Figure 3), China by 42 percentage points, Brazil by 31.5 percentage points and Indonesia by 15.6 percentage points.

Figure 3: Comparative tertiary enrolment rates (gross enrolment rates), 1990 to 2021 (percent of 18-22-year-olds), selected countries

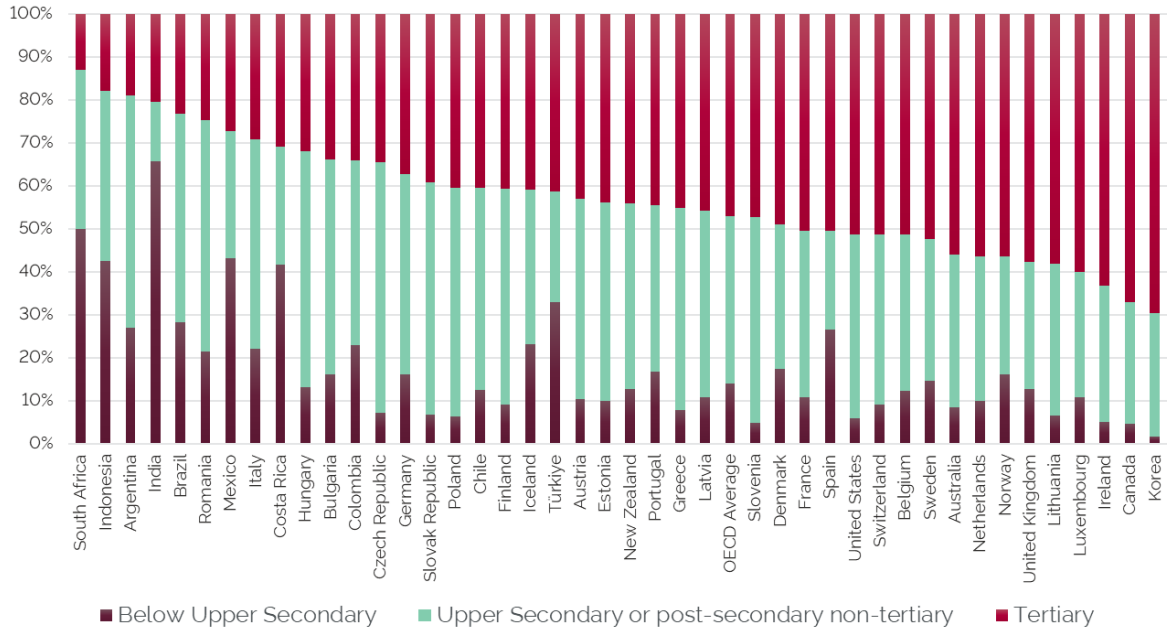


Source: Data from UNESCO Institute for Statistics (UIS). https://apiportal.uis.unesco.org/bdds via World Bank Open Data, April 2024. Data from https://databank.worldbank.org/source/world-development-indicators/Series/SE.TER.ENRR World Bank

In 1990, South Africa had a low PSET enrolment rate of around 10%, but this was comparable to that of Brazil and Indonesia … by 2021 South Africa lagged Peru's tertiary GER by 46 percentage points, China by 42, Brazil by 31.5 and Indonesia by 15.6.

South Africa's relatively slow PSET expansion is also shown in educational attainment data. Against OECD countries and OECD country partners, in 2022 South Africa had the lowest proportion of 25–34-year-olds with completed tertiary education (see Figure 4). With tertiary attainment of 13%, South Africa falls below all the other middle-income countries in the comparison, including Indonesia (18%), India (20%) and Mexico (27%).[81]

Figure 4: Educational attainment of 25–34-year-olds (2022). OECD countries and OECD partner countries



Source: OECD – Education at a Glance 2023 (https://stat.link/5dnhgq, updated 12 September 2023)

[81]Also see Khuluvhe (2023, p. 11) who provides a tertiary attainment rate for South Africa that is 1.9% point higher for the 2018 to 2020 period than the one given above for 2022, but values for other middle-income countries are almost exactly the same as the 2022 numbers above.

4 FACTORS BEHIND ENROLMENT TRENDS AND PROSPECTS FOR ABSORPTION

South Africa has fallen significantly behind other middle-income countries in terms of tertiary attainment and enrolment of students at a tertiary level. While the overall target for post-school enrolment is high, the target for tertiary or university enrolment by 2030 (1.6 million students and about 27% of the relevant age group) is compared to what other upper-middle-income countries are attaining. In particular, the contribution that private universities and colleges could make, and are making in other countries, were probably underestimated. To remain competitive, South Africa should target a higher number of students in tertiary education which should be comparable to what other middle-income countries are doing, with tertiary GERs at this stage ranging quite widely between the 29% in India to above 60% in China.

In the case of TVET and Community colleges, quality remains a concern and growth in numbers have been erratic and came down significantly after 2019, possibly related to the COVID-19 pandemic.

While rapid expansion in the college and tertiary sector is therefore needed, there are significant obstacles to expanding at the required speed. These constraints could be seen as being related to a range of factors driving low tertiary enrolment and inadequate supply of skilled labour and, lastly, fiscal and budgetary constraints. In this section, the first set of constraints is discussed before fiscal constraints are discussed in the next section.

In South Africa, tertiary enrolment and skilled labour supply[82] are constrained by the quality of the school system, the absence of appropriate mechanisms for financing PSET (hence leading to access and success challenges for students and sustainability problems for the providers) as well as PSET system design, structure and efficiency issues (see Rogan, 2018, p. 243–248).

The South African schooling system has been improving as measured by standardised international tests and there has been a significant rise in bachelor pass rates in the National Senior Certificate examinations since 1994 (as is shown in chapter 2 of this compilation). However, quality in the system remains low, leading to a too limited number of students completing schooling at a level and standard which qualify them for tertiary education. There is also limited preparation for the labour market at school level, especially for those exiting the school system prior to Grade 12. The weak schooling system therefore constrains access to the PSET system and the potential of students to be successful in the system, and also provides weak linkages to jobs. Van der Berg and

[82] While the South African labour market faces a demand constraint because of low growth and the skills bias in industrial structure and industrial policy, there is also a supply constraint. In addition to demand and supply factors behind youth unemployment, the country's labour market arguably also suffers from operational or efficiency problems. These are sometimes related to what is seen as overregulation and counterproductive collective interventions (unionism) (Nattrass & Seekings, 2001) and at other times to "inefficient job search and matching processes" (Filmer & Fox, 2014, p. 240).

Hofmeyr (2018, p. 1) argued that "from the perspective of the skills needs of the South African labour market, the major problems lies in the extremely weak and unequal school system". Rogan (2018, p. 17) states that "research … shows that school quality has greatly contributed to a low throughput rate of learners from Grades 1 to 12 as well as to poor participation in higher education". While school quality and school completion has been improving (Gustafsson, 2023), performance levels on international standardised tests remain very low, and progress has been impaired as a result of pandemic related learning losses. Standards are also threatened by a continuing phase of fiscal consolidation and its likely impact on reducing inputs, ranging from personnel to learner support material and infrastructure.

Short-term financial constraints on students, both with regard to study fees and living costs, have also played a role in reducing access as well as impacting on the success of students. While the availability of bursaries to students from low-income households have expanded significantly through the NSFAS, the financing issues have not been dealt with adequately. This is because

- The cost of the current student funding scheme is unsustainable fiscally, especially if current overall enrolment targets are still being aimed at.
- The funding scheme is likely to have adverse incentives because young people are driven to study not because of aptitude and dedication but because, in the context of job scarcity, it provides the only avenue through which they can secure an income for themselves, and also an income for their families. Branson and Whitelaw state that "NSFAS could shift the costs vs. benefits of enrolling in university because it offers social protection against a backdrop of high unemployment. In other words, does NSFAS make poorer students more likely to enrol in university, and potentially into programs not aligned with the skills needs of the economy – even if they know they may not graduate?" (2023, p. 4).
- Full-cost bursaries without any required co-contribution do not provide incentives to complete in the shortest available period. Branson and Whitelaw (2023, p. 5) note that there could be "contention between the supportive role of NSFAS, and its possible distortionary effects on student and university performance".
- In addition, weak administration of the grant system, high accommodation and living costs in certain areas and financial constraints on students from certain middle-class households (sometimes referred to as the "missing middle") create funding shortfalls for students. These shortfalls lead to further accumulation of student debt and sometimes exclusion from universities. As a result, rising student debt is likely to lead to conflict and instability on campuses but also to directly impact the sustainability of universities because of high debt write-offs.[83]
- Branson (2018b, p. 3) has argued that a very important group that is negatively influenced by short-term financial constraints are "middle-income students with

[83] Cloete (2016, p. 4) argued that, for some poor students "rather than higher education being an empowering mechanism, it instead disempowers poor students and puts them deeper into debt. Are we surprised that some of these students went beyond a protest march?"

scholastic ability who qualify to study at university but who end up in technical colleges due to financial constraints". The NSFAS expansion would have missed a significant proportion of these students.

There are several further systemic issues with the PSET system which lead to obstacles to efficient expansion.

With regard to higher education and undergraduate study in particular, Cloete (2016, p. 2) has argued that the South African undergraduate system is "very inefficient". This is shown by the limited proportion of intakes who complete the curriculum in the intended time and thus large numbers of students who remain registered for long periods and high dropout rates. Costs are also high because course offerings are limited or not appropriate. Put differently, massification requires not only expansion of places but also diversification and establishment of a range of study options which are tailored not only to "old elites" but to middle classes in a modernising economy. Bank et al. (2018, p. 5) argue that "the current crisis in higher education is to a large extent due to the massification of a system on a too narrow and colonial base to accommodate and absorb the needs and aspirations of a new generation of students, especially those from historically disadvantaged backgrounds." They argue (Bank et al., 2018, p. 7) that in South Africa, as Barber et al. (2013) argued for the UK case, "the traditional (research) university format has become increasingly dominant at the expense of other models that may be more appropriate to the world's diverse knowledge requirements and development needs." An argument has also been made for a basic 4-year undergraduate degree because of the inefficiency of the current three-year degree due to high dropout and low throughput. The increased standard duration would be compensated for by a reduction in actual duration of successful completion (South Africa, Council on Higher Education (CHE), 2013).

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In the TVET sector, in addition to low quality and efficiency, the system has come to some extent to cater for those who have already completed school rather than for those who wanted to have an alternative vocational route to school completion. At the moment, enrolment at TVETs seem to be a fallback for those who do not qualify or who cannot afford university and they are not institutions of choice or as Branson (2018b, p3) indicated, they "are often perceived as second-rate institutions compared to universities". While many factors such as poor management and disconnect between curriculum and labour market skills requirements have been identified, the failure over a long period of time to put TVET colleges on a more positive trajectory suggests a systemic failure related to

either policy or theoretical approach. Recently Allais (2024) argued that the South African vocational education system has always been weak and she related this to three broad factors:

- Unrealistic expectations that TVET colleges can confront the dual and diverse challenges of both ensuring a regular supply of highly skilled artisans to the economy and to "absorb masses of young people who have fared poorly in formal education, giving them skills for work" (Meaning they have to focus on both high-level skills training as well as remediation of basic education backlogs).
- Thirty years of almost constant change in policy, governance, curriculum and quality assurance. Thus, college management and staff have been "overwhelm[ed] … with constant change".
- Having to deal with two sets of institutional logics and funding mechanisms, one related to the national certificates (National Certificate Vocational) funded through teacher posts by the DHET and a second focused on the occupational qualifications funded through the skill levy mechanism.

5 THE BUDGET SITUATION AND PROSPECTS FOR PSET GROWTH AND ABSORPTION

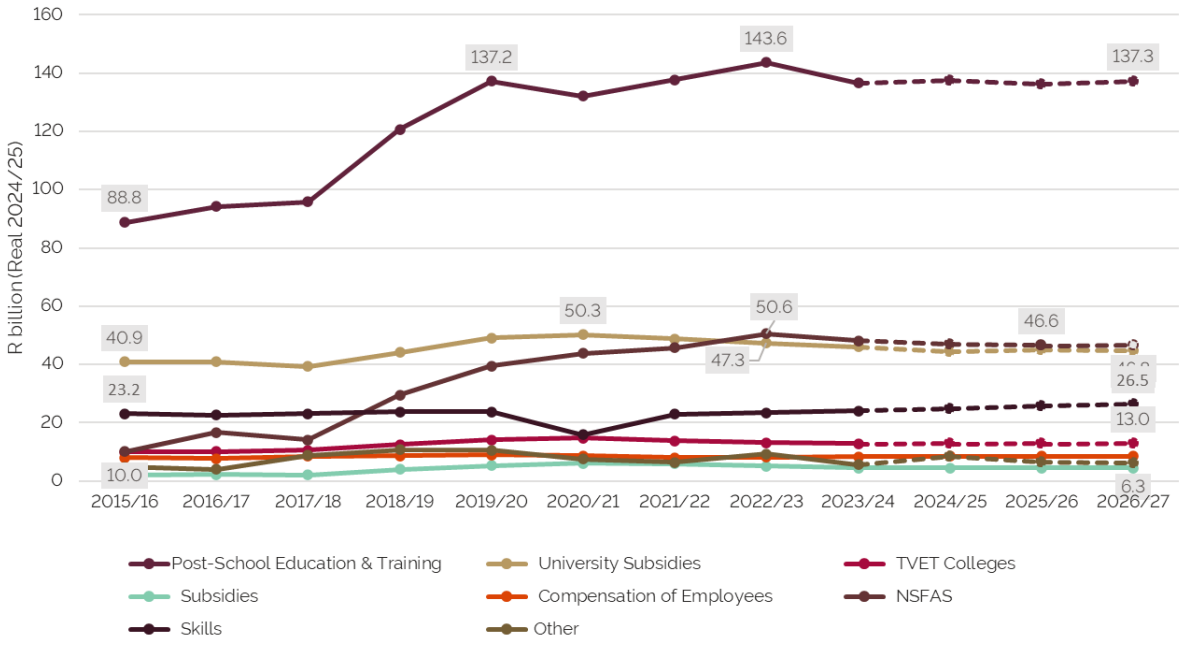
There are four main streams of funding for PSET. Firstly, from general revenue, national government funds educational institutions directly and funds low-income students, providing bursaries that subsidise their university fees, other study costs and living costs, including accommodation. Secondly, households and students which are not subsidised, or not fully subsidised, contribute through the payment of study fees and through living expenses. Recipients of NSFAS bursaries have increased from about 218,000 university and TVET students in 2015 to 786,000 in 2023/24. Thirdly, education institutions receive "third-stream" income through donations and funded research flowing from research funding organisations such as the National Research Foundation and the corporate and voluntary sector. Currently there is little systematic, public information available about household spending on PSET and on third-stream income. In the 2012 fiscal year, it was estimated that in total, state subsidies to institutions contributed 40% to university funding, fees 31% and third-stream income 29%. These proportions differ significantly between different universities. In the case of TVET colleges, there is a much greater reliance on tax-funded state financing and less on fees. Fourthly, earmarked taxes (from a skills levy payable by employers and workers) fund the National Skills Fund and Sector Education and Training Authorities (who fund sector skills training).

In 2023/24 the government spent an estimated R130.5 billion on post-school education, including skills system spending. This amounts to 5.8% of total government expenditure and 1.9% of Gross Domestic Project (GDP). Between 2015/16 and 2022/23 real spending on PSET grew by about 62% and PSET spending increased rapidly from 22% to 30% of total education spending. After 2022/23, real spending on PSET, however, started

declining and medium-term projections are that by 2026/27 it will be only very slightly above levels in 2019/20.

The rapid expansion of real PSET spending until 2022/23 did not relieve funding pressures in the sector. This is because the bulk of the increase in spending flowed as bursaries through the NSFAS to subsidise study fees and living costs of lower income students. As shown in Figure 2, spending on the NSFAS increased in real terms from R10 billion in 2015/16 to R46 billion in 2023/34, starting to exceed funding of universities in the latter year. Both the direct state funding of universities and the funding of TVET colleges have been declining in real terms since 2021/22. Over the MTEF (2024/25 to 2026/27) university funding is projected to continue to decline and TVET college funding to stay constant in real terms.

Figure 5 Real government spending (2024/25 Rand) on PSET components and Total, R billion



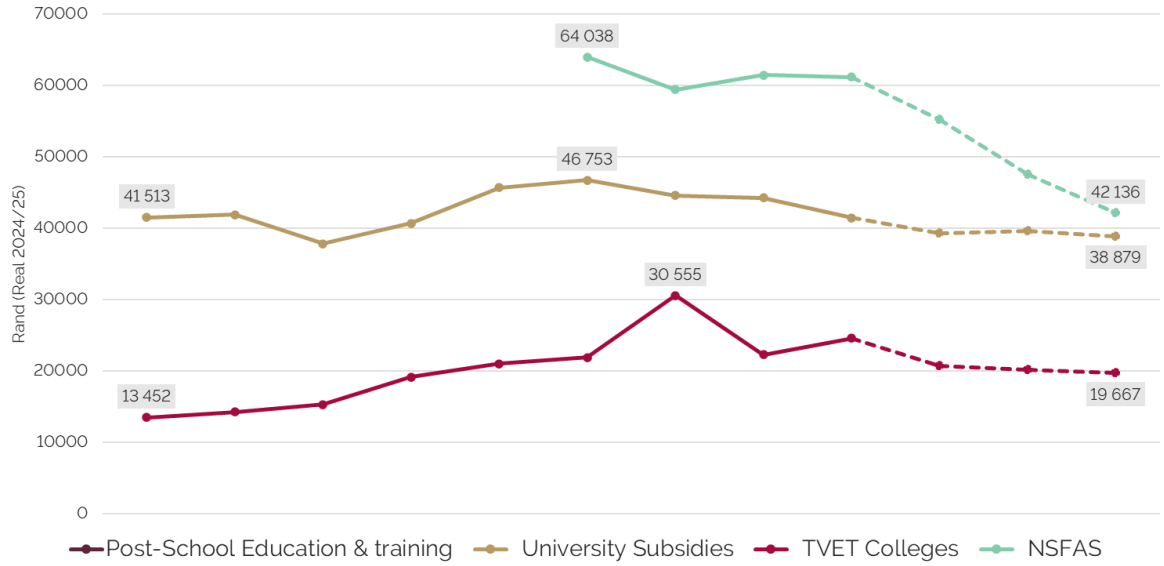
Source: Calculations from South Africa, National Treasury, Budget Review data, various years to 2024

In the two largest components of PSET, universities and TVET colleges, real per student state spending, excluding NSFAS, increased substantially between 2015/16 and 2020/21, by about 13% in the case of universities and 63% in the case of TVET colleges. Subsequently, as fiscal conditions worsened due to continued slow growth and increasing debt burdens, real spending and budgets have, however, dropped. It is projected that by 2026/27 university per student budgets will be about 6% below budget levels in 2015/16. TVET per student funding will remain just above the levels of a decade earlier but will be below levels in 2020/21. Per student NSFAS funding is also projected to decline from R64,038 per student in 2021/22 to R42,136 per student 2026/27.

These trends in per learner funding implies that three critical pressures will persist:

- It will be impossible to expand places in PSET in line with what is needed to respond to the aspirations of South African youth and the needs of the economy and society.
- Funding will not be available to improve quality in the PSET sector, which is a long-standing imperative.
- Declining real bursary funding availability, relative to need and expectations, combined with continuing challenges in administering these funds, will perpetuate student hardship (also impacting on results) and will contribute to further escalation of student debt levels. This will impact peace on campuses and the financial viability of certain institutions, if not, on that of the sector as a whole.

Figure 6: Real per capita government spending on and budgets for university subsidies, TVET colleges and NSFAS bursaries, Rand (2015/16 to 2026/27)



Source: Calculations from South Africa, National Treasury, Budget Review data, various years to 2024; National Treasury, Estimates of National Expenditure data, 2024 and Department of Higher Education and Training, Statistics on Post-School Education and Training , various years to 2023 and PowerHEDA (https://www.heda.co.za/PowerHEDA/dashboard.aspx)

6 CONCLUSION

Increases in PSET enrolment after 1994 significantly improved the absorption of young people into PSET to as high as 43% in 2015 (where absorption is measured against the number of 18-22-year-olds in the population). This was the result of a significant expansion of both university enrolments and TVET enrolments, although a decline in the size of the cohort also assisted.

After 2015, TVET enrolments, however, appeared to start declining and university numbers grew more slowly, so that absorption dropped somewhat by 2020. Over the 12 years to 2022 public university enrolment grew by about half of the targeted rate (1.6% per year against a target of 3.2% per year), TVET colleges by about a third of the targeted rate (3.1% against 9.5%) and CET college enrolment declined by as much as it was targeted to grow (about 6%). The only exception with regard to performance with growth against targets was private university enrolment which grew at more than double the targeted growth (8.5% against a target of 4% per year). However, more research is needed to clarify PSET enrolment numbers from administrative data against those reflected in household survey data, with efforts needed to ensure DHET enrolment statistics are comparable from year to year.

In an international comparative perspective, South Africa has also fallen significantly behind upper middle-income countries in terms of tertiary enrolment with a 25.4% gross enrolment ratio (GER) in 2021 compared to 60.6% for upper middle-income countries as a group and also against the GER for a range of comparator countries such as India (31.6%), Indonesia (41.0%) and Brazil (56.8%). South Africa also lags significantly in terms of tertiary attainment.

While trends therefore point to the need to significantly expand PSET enrolment, there are significant obstacles to doing this in coming years. A formidable obstacle is South Africa's economic and fiscal situation where slow growth, and a rapid build-up of state debt and debt cost, have forced a substantial fiscal consolidation and significant real cuts in almost all sectors. It is therefore currently not clear how more PSET places in institutions or more students could be financed in the near future. In fact, declining real per capita budgets imply significant pressure on students, institutions and quality.

In addition to the overall economic and fiscal position there are also significant systemic constraints on the expansion of the PSET system. These obstacles range from quality constraints in the schooling system which, despite improvements in recent years, still limits the number of students completing schooling at a level and standard which qualify them for tertiary education; an inadequate, inefficient and unsustainable student funding system; and PSET system inadequacies. The latter ranges from a very costly and inadequately diversified undergraduate university system to continuing complexity and uncertainty in TVET policies and strategies.

Ways need to be found to invest in the expansion and improvement in quality of South Africa's PSET if the sector is to support, and not impede, South Africa's economic development. In addition to its important role in supporting economic expansion, the sector is also fundamental to addressing unemployment (directly and indirectly) and inequality. A first possible step is to get greater consensus about the role of PSET in South Africa's economic development before identifying how the various financial and systemic obstacles to expansion can be addressed urgently. As pointed out by Cloete and Van Schalkwyk, and indeed Piketty, in the initial quotations, development of the PSET sector is an essential component of modern economic growth and should not be allowed to falter.

7 REFERENCES

Allais, S. 2024, July 11. It's time to get vocational education right in the battle against youth unemployment (Part two). Daily Maverick. https://www.dailymaverick.co.za/article/2024-07-11-its-time-to-get-vocational-education-less-wrong-in-the-battle-against-youth-unemployment-part-two/

Allais, S., & Wedekind, V. 2020. Targets, TVET and Transformation. In A. Wulff (Ed.), Grading Goal Four (pp. 322–338). BRILL. https://doi.org/10.1163/9789004430365_015

Bank, L. J., Nico Cloete, & Schalkwyk, F. van (Eds.). 2018. Anchored in Place—Rethinking Higher Education and Development in South Africa. African Minds.

Barber, M., Donnelly, K., & Rizvi, S. 2013. An avalanche is coming: Higher education and the revolution ahead. IPPR. https://www.ippr.org/articles/an-avalanche-is-coming-higher-education-and-the-revolution-ahead

Branson, N. 2018a. Post-secondary Education Enrolment: Evidence from the National Income Dynamic Study (NIDS). Social Mobility and Inequality in South Africa, Cape Town.

Branson, N. 2018b, July 25. Lots of young South Africans aren't going to technical colleges. What can be done. The Conversation. http://theconversation.com/lots-of-young-south-africans-arent-going-to-technical-colleges-what-can-be-done-100180

Branson, N., & Lam, D. 2021, November 18. The Economics of Education in South Africa. The *Oxford Handbook of the South African Economy.* https://doi.org/10.1093/oxfordhb/9780192894199.013.31

Branson, N., & Whitelaw, E. 2023, November 29. South Africa's higher education funding conundrum: Could the current funding system hamper social mobility and university performance? Globaldev Blog. https://globaldev.blog/south-africas-higher-education-funding-conundrum-could-the-current-funding-system-hamper-social-mobility-and-university-performance/

Bunting, I. 2006. Students. In Nico Cloete, Peter Maassen, Richard Fehnel, & Teboho Moja (Eds.), *Transformation in Higher Education: Global Pressures and Local Realities.* Springer Netherlands.

Case, A., & Deaton, A. 2022. The Great Divide: Education, Despair, and Death. *Annual Review of Economics,* 14(1), p1–21. https://doi.org/10.1146/annurev-economics-051520-015607

Cloete, N. 2016. For Sustainable Funding and Fees, the Undergraduate System in South Africa Must Be Restructured. *South African Journal of Science,* 112(3–4), p1–5.

Cloete, N., & Schalkwyk, F. van. 2021, March 25. Free higher education: Crises that could have been foreseen. University World News. https://www.universityworldnews.com/post.php?story=20210324220438212

Dessus, S. C., Hanusch, M., & Nagashima, Y. 2019. South Africa Economic Update: Enrollments in Tertiary Education Must Rise. World Bank. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/173091547659025030/South-Africa-Economic-Update-Enrollments-in-Tertiary-Education-Must-Rise

Filmer, D., & Fox, L. 2014. Focus Note 4—Youth Unemployment in South Africa: Different Configuration, Different Approaches. In Youth Employment in Sub-Saharan Africa. World Bank.

Garisch, C. 2024. Why Do Students Drop Out of Tvet Colleges and What Would Contribute Towards Their Retention? (Five-Year Research Programme on Technical and Vocational Education and Training (TVET)). Department of HIgher Education and Training.

Gustafsson, M. 2023. Education is improving but the message is hard to convey. Econ 3x3. https://www.econ3x3.org/article/education-improving-message-hard-convey

IDSC. 2023. PowerHEDA Dashboard (Version 2023) [Dataset]. https://www.heda.co.za/PowerHEDA/Dashboard.aspx

Johnson, L., & Dorrington, R. 2024. Thembisa Version 4.7: Age Specific Outputs (Population Estimates) by Province. Centre for Infectious Disease Epidemiology and Research, University of Cape Town.

Khuluvhe, M. 2023. Highest Level of Educational Attainment in South Africa (Fact Sheet). Department of Higher Edication and Training. https://lmi-research.org.za/wp-content/uploads/2024/06/WEB-DPRU-FACTSHEET-7-7-4b-Doctoral_Graduates-2024.pdf

Khuluvhe, M., & Ganyaupfu, E. 2022. South Africa—Access to Tertiary Education—Country Comparison using Gross Enrolment Ratio (Fact Sheet). Department of Higher Education and Training. https://www.dhet.gov.za/Planning%20Monitoring%20and%20Evaluation%20Coordination/Fact%20Sheet%20-%20Access%20to%20Tertiary%20Education%20-

%20Country%20Comparison%20using%20Gross%20Enrolment%20Ratio%20_%20March%202022.pdf

Khuluvhe, M., Netshifhefhe, E., Ganyaupfu, E., & Negogogo, V. 2024. Post-School Education and Training—Monitor Macro-Indicator Trends—2024. Department of Higher Education and Training. https://lmi-research.org.za/wp-content/uploads/2021/06/DHET-PSET2021-WEB.pdf

Levy, B., Hirsch, A., Naidoo, V., & Nxele, M. 2021. South Africa: When Strong Institutions and Massive Inequalities Collide. Carnegie Endowment for International Peace. https://carnegieendowment.org/2021/03/18/south-africa-when-strong-institutions-and-massive-inequalities-collide-pub-84063

Piketty, T. 2014. *Capital in the Twenty-First Century* (A. Goldhammer, Trans.). The Belknap Press of Harvard University Press.

Rogan, M. (Ed.). 2018. Post-School Education and the Labour Market in South Africa. HSRC Press. https://jctest.co.za/hsrcpress/wp-content/uploads/woocommerce_uploads/2024/04/POST-SCHOOLING_eBOOK-qttxmw.pdf

South Africa, Council on Higher Education (CHE). 2013. A proposal for undergraduate curriculum reform in South Africa: The case for a flexible curriculum structure. https://www.che.ac.za/publications/research/proposal-undergraduate-curriculum-reform-south-africa-case-flexible

South Africa, Department of Basic Education (DBE). 2024. Review of progress in the basic education sector to 2024—Analysis of Key Statistics (Final). DBE. https://www.education.gov.za/Portals/0/Documents/Publications/2024/Review%20of%20progress%20in%20the%20basic%20education%20sector%20to%202024%20Final.pdf?ver=2024-11-20-075638-597

South Africa, Department of Higher Education and Training. 2023a. 2000 to 2020 First Time Entering Undergraduate Cohort Studies for Public Higher Education Institutions. DHET.

South Africa, Department of Higher Education and Training. 2023b. Statistics on Post-School Education and Training in South Africa 2021. Department of Higher Education and Training.

South Africa, Department of Higher Education and Training. 2024. Statistics on Post-School Education and Training in South Africa, 2022. DHET. https://www.dhet.gov.za/DHET%20Statistics%20Publication/Statistics%20on%20Post-School%20Education%20and%20Training%20in%20South%20Africa,%202022.pdf

South Africa, Department of Higher Education and Training (DHET). 2012. Green Paper for Post-School Education and Training. DHET.

South Africa, Department of Higher Education and Training (DHET). 2013. White Paper for Post-School Education and Training—Building an Expanded, Effective and Integrated Post-School System. DHET.

South Africa, Department of Higher Education and Training (DHET). 2023. National Plan for Post-School Education and Training 2021–2030. DHET.

South Africa, National Planning Commission (NPC). 2012. Our Future Make It Work—National Development Plan 2030. NPC.

South Africa, Presidency. 2014. Twenty Year Review—South Africa 1994—2014. Presidency. https://www.dpme.gov.za/news/documents/20%20year%20review.pdf

South African Reserve Bank. 2021. Box 1—The inclusion of technical and vocational education and training colleges in national extra-budgetary institution statistics. In Quarterly Bulletin (pp. 85–86). SARB. https://www.resbank.co.za/content/dam/sarb/publications/quarterly-bulletins/quarterly-bulletin-publications/2021/back-up-september/QBSept2021Internet.pdf

Staff Reporter. 2013, October 24. Kneejerk liberal opposition tries to limit the powers of the state. The Mail & Guardian. https://mg.co.za/article/2013-10-24-kneejerk-liberal-opposition-tries-to-limit-the-powers-of-the-state/

Statistics South Africa. 2023, October 13. Census 2022 Population Count Results 10 October 2023. https://www.statssa.gov.za/?p=16716

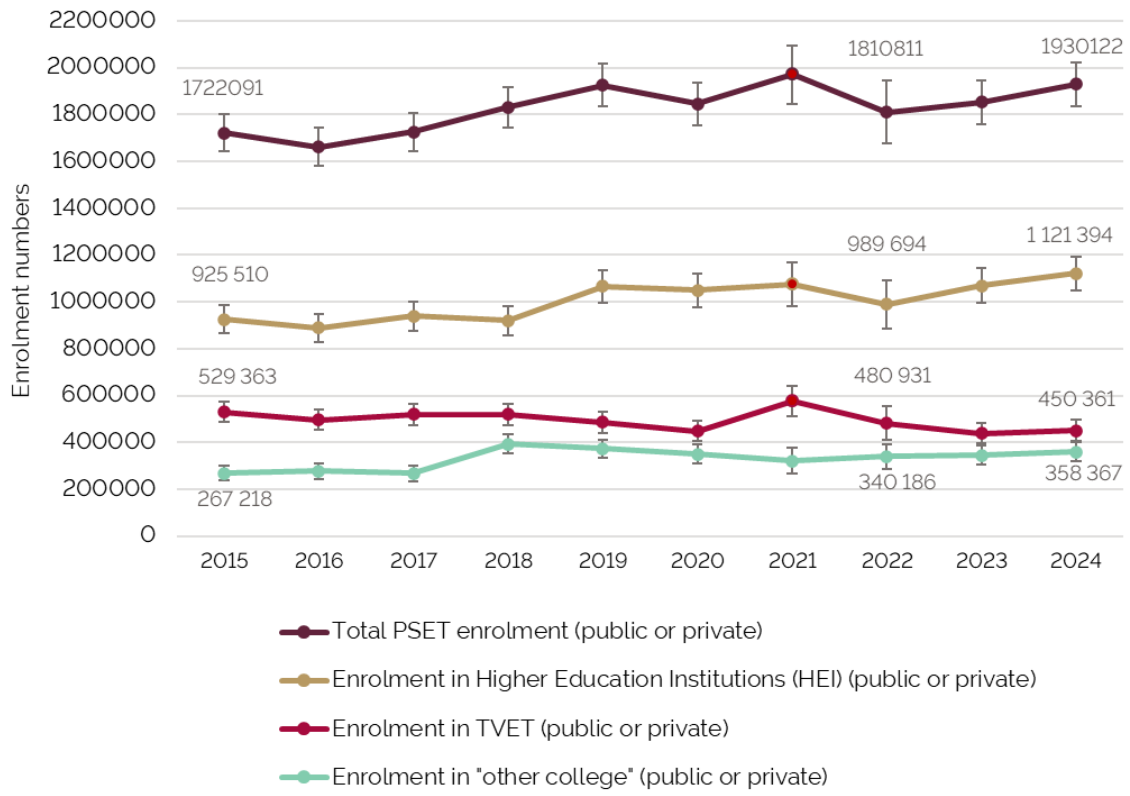
Van der Berg, S., & Hofmeyr, H. 2018. An Incomplete Transition: Overcoming the Legacy of Exclusion in South Africa. World Bank. https://documents1.worldbank.org/curated/ru/339291529320964248/pdf/127304-Education-in-South-Africa.pdf

Wilkinson, R., & Pickett, K. 2010. *The Spirit Level: Why Greater Equality Makes Societies Stronger* (1st American). Bloomsbury Press. http://gen.lib.rus.ec/book/index.php?md5=f3cd4fe1215bee583e9d4bd827c59c80

You, J. 2015. *Democracy, inequality and corruption.* Cambridge University Press.

8 APPENDIX

Figure A1: Total enrolment numbers in PSET, HEIs, TVETs and "other colleges" reported in the QLFS, 2015-2024 using quarter 1 data



Source: Calculations by Wills using QLFS data - weighted with complex survey weights accounted for, quarter 1. Sample restricted to 15 to 80 year olds. Treat with cautian estimates from 2021 due to telephonic surveying and low response rates during COVID-19 pandemic. 95% confidence intervals shown.

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