

## Ticket to Higher Education: A Decision-Making Tool for Choosing Higher Education Offerings in South Africa

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### Abstract

Despite sustained policy interventions aimed at expanding access to higher education, significant disparities persist, particularly for marginalized students from historically disadvantaged communities. Additionally, while the overall enrollment figures have significantly improved, systemic inequities continue to hinder equitable participation. This paper critically examines key access barriers, such as financial insecurity, academic under-preparedness, ambiguity surrounding admission criteria, and administrative delays such as late document submission. The paper proposes a data-informed decision-making framework tailored to support prospective students, especially first-generation applicants in navigating the complex pathways of university, Technical and Vocational Education and Training college, and matric re-write applications. The framework leverages robust academic performance indicators to recommend optimal educational trajectories and integrates real-time guidance on funding opportunities. By streamlining procedural workflows and enhancing access to accurate, timely information, the tool seeks to empower students to make informed academic decisions. The framework further offers scalable, practical intervention to mitigate both institutional and socioeconomic barriers, contributing to a more inclusive and equitable access to higher education institutions in South Africa.

**Keywords:** TVET; higher education offerings; decision-making model; equitable access; South Africa universities

### INTRODUCTION

Since the dawn of democracy in 1994, South African higher education landscape has experienced intense structural transformation, characterized by the expansion of access to higher education for students from historically marginalized communities. These reforms have contributed to a progressively diversified and demographically representative student population, reflecting broader national efforts toward equity and redress in post-apartheid higher education policy (Mtshali et al., 2020). Despite the notable progress made by the South African government in expanding access to higher education, persistent socioeconomic inequalities continue to undermine equitable participation.

These inequalities include, among others, inadequate student funding, limited academic preparedness, insufficient academic development support, misaligned pedagogical practices, restricted access to critical information, and pervasive language barriers. These structural implications disproportionately affect underprivileged matriculants, constraining their ability to successfully transition into post-matric school education and further perpetuating cycles of exclusion within the higher education system (Bronkhorst & Michael, 2017; Money et al., 2020; de Costa, 2021; Treve, 2021; Alenezi et al., 2023). Dube (2024) argues that the imbalance

between demand and access to higher education institutions surpasses the available resources and facilities. To compound this, higher education institutions are unable to cope with the high influx of students.

In South Africa, many historically disadvantaged students in universities and Technical and Vocational Education and Training (TVET) colleges rely heavily on the national student financial aid scheme (NSFAS). This is due to socio-economic inequalities apparent in the South African system post-apartheid (de Villiers, 2023), as a result, without NSFAS most of these students are denied access to higher education space, and for some who receive NSFAS are rejected due to course choice misalignment and not meeting the prescribed minimum requirements. This further exacerbates students' frustrations, leading some resorting to criminality to fit in an environment and for survival due to high unemployment (Armin, 2020; Sugiharti et al., 2022).

Several researchers highlight the complex interplay of factors affecting students' application processes to universities and TVET colleges in South Africa. Key factors include the high volume of applications students must complete, the extensive range of available academic and vocational pathways, and the procedural intricacies embedded within each institution's application system. These variables significantly shape students' post-matric decision-making processes. The heterogeneity in application formats, eligibility criteria, and submission processes not only introduces cognitive and logistical burdens but also creates differential access points that can either facilitate or hinder educational progression. Consequently, these dynamics play an important role in ascertaining students' educational trajectories and, by extension, their long-term career outcomes (Delaney & Odle, 2025; Oreopoulous & Ford, 2019). Additionally, Woldegiorgis and Chiramba (2025) further highlight several critical factors impeding students' access to higher education and their successful transition, such as misunderstandings regarding the admissions process, including unclear requirements and deadlines, which can create significant barriers for prospective students. Additionally, financial difficulties, such as rising cost of tuition and the lack of sufficient financial aid options, further compound to the inability to pursue higher education (Cai & Heathcote, 2022; Minor, 2023). Existing frameworks have successfully addressed some common challenges faced by first-time entering students (FTENS) in navigating higher education settings (Mulaudzi, 2023; Ahuja, 2024; Stokoe et al., 2024). The transition of high school learners to higher education often highlights issues related to learner preparedness (Lombard, 2020, Ajani, & Gamede, 2020, Sikhakhane et al., 2021). Additionally, the South African has also designed frameworks such as the national career advance portal (NCAP) "*Khetha*" which is an online self-help tool designed to assist students in facilitating informed career and study decisions (DHET, 2013a), and the Central Application Clearing House (CACH) which provides matriculants with a second chance to gain access to higher education institutions (universities and TVET Colleges). This critical service assists students whose original application may have been unsuccessful but have qualifying final Grade 12 results (DHET, 2013b).

Although the CACH and the *Khetha* services are effective in their application, they are inclusive of institutions that have indicated their intention to participate in CACH serve as a mediator for qualifying students who were unsuccessful in their first application, neglecting those who have not applied or having poor final grade 12 results. Highlighting a significant gap in frameworks that address the low enrollment rates in universities and TVET colleges for students from disadvantaged backgrounds. To address this issue, this study proposes a framework that serves as a decision-making tool to aid students in successfully applying for university, TVET programs, or to re-write their matriculation exams.

## GENERAL DESCRIPTION OF THE COMMUNITY, PROBLEMS AND TARGET SOLUTIONS

### General description

Career exhibitions (open days) ease student choice of degree program and university; those who are exposed succeed in smooth application, while others are left out of the process (Agumba et al., 2023). Access to higher education is regarded as a critical lever for social mobility. However, systemic barriers continue to limit access for many prospective students. These barriers can include a lack of information and resources, especially for those from marginalised backgrounds, and an unfamiliarity with the *"hidden curriculum"* of academic expectations (Berhe et al., 2021; Carroll et al., 2023). This can lead to a situation where some students are well-prepared and successfully navigate the application processes due to career exhibitions and open days, while others are excluded as a consequence of lack of access to these opportunities (Wickli, 2018; dos Reis et al., 2019). As a result, these systemic inequalities are perpetuated, and social mobility is hindered.

### Problems

#### Uncertainty about eligibility requirements

Uncertainty about eligibility requirements is an understudied issue, yet it can be a major obstacle for prospective students, particularly those from disadvantaged backgrounds (Schuyler et al., 2021; Kamalumpundi et al., 2024; Woldegiorgis & Chiramba, 2025). Uncertainty concerning higher education application process frequently stems from the opaque admission criteria, ambiguous financial aid eligibility requirements, and inconsistent programme-specific prerequisites. These informational gaps can discourage academically capable students from applying, leading to misjudgements about their admissibility, or further result in missed application deadlines and funding opportunities. The heterogeneity of requirements both within institutions and departments, further exacerbates student confusion, particularly for those who are socioeconomically disadvantaged and often lacking access to reliable guidance and digital resources.

Empirical evidence suggests that the clarity, accessibility, and consistency of admissions-related information are critical determinants of student application behaviour and directly influence the inclusivity and effectiveness of higher education access (Laanui, 2014; Boliver et al., 2017; Ober et al., 2023; Paris et al., 2024). Woldegiorgis & Chiramba (2025) argue that the persistent structural inequalities experienced by students from historically disadvantaged backgrounds have limited their access to information about admission processes, inevitably contributing to their uncertainty surrounding eligibility requirements.

#### Delays in Document Submission

Submitting the required documents on time is an important step in the higher education application process. Many prospective students in South Africa encounter delays when it comes to gathering, verifying, and submitting essential materials. These materials include certified copies of identity documents, grade 11 or 12 results, proof of residence, and financial aid forms. The delay in document submission can negatively impact the application process, especially when HEIs maintain rigid deadlines.

There are several factors that contribute to delays in document submission. Prospective students from rural or under-resourced communities have limited access to administrative services such as post offices, police stations, or internet facilities where documents can be certified, scanned, and submitted for application purposes (Björkum & Basic, 2024). Inconsistencies in the clear and timeous communication from HEIs can result in critical

procedural disruptions, often manifesting as last-minute crises when applicants discover the absence of essential documentation required for a successful application submission.

### **Financial Concerns**

Financial barriers remain one of the most significant hindrances to higher education access in South Africa. Beyond tuition costs, prospective students need to factor in indirect costs such as registration fees, textbooks, transport, meals, and internet access that create ongoing financial pressure. For many students, especially those in rural or peri-urban areas, the cost of relocating to attend university is unaffordable (Agumba et al., 2023; Chidakwa, 2025). These factors can discourage qualifying students from applying to institutions far from home, limiting their academic options.

While the National Student Financial Aid Scheme (NSFAS) provides essential support for low-income students (de Villiers, 2023), the application process is often complex, poorly communicated, and subject to delays. Students report confusion over eligibility criteria, required documentation, and application timelines (Bronkhorst & Michael, 2017; Albertus & Makoza, 2025). This uncertainty may cause prospective students to abandon their application due to fear of incurring debt or being left without support during their envisaged period of study.

There is also a psychosocial toll associated with financial insecurity. Students often experience high levels of stress, anxiety, and even shame associated with their financial status. In some cases, this contributes to poor academic performance, absenteeism, and ultimately, dropout (Jai, 2024).

### **Inadequate academic preparedness**

Inadequate academic preparedness poses a significant challenge within higher education, hindering student success and straining institutional resources. Students, especially those from disadvantaged backgrounds, may lack fundamental skills (Asowayan et al., 2017), struggle with the demands of university-level coursework (Dann et al., 2022), or be unfamiliar with academic expectations. Factors such as negative educational experiences, family issues, or a lack of parental involvement can contribute to under preparedness (Finkelstein, 2014). To address this issue effectively, institutions need to implement comprehensive support systems, adapt teaching approaches (Perin & Holschuh, 2019), and consider non-cognitive factors that influence academic performance (Al-Sheeb et al., 2019; Molnár & Kocsis, 2024). Overcoming academic under preparedness is essential for ensuring equitable access to higher education and promoting student success.

## **METHOD**

The tool assesses Grade 11 final marks or final matric marks for those who have already completed matric for university or TVET qualification. Those who meet university requirements will be redirected to the university section, while those who meet TVET requirements will be redirected to the TVET section. In a case where a learner does not meet university/TVET requirements, the system will assist in applying for matric rewrites to centers in proximity.

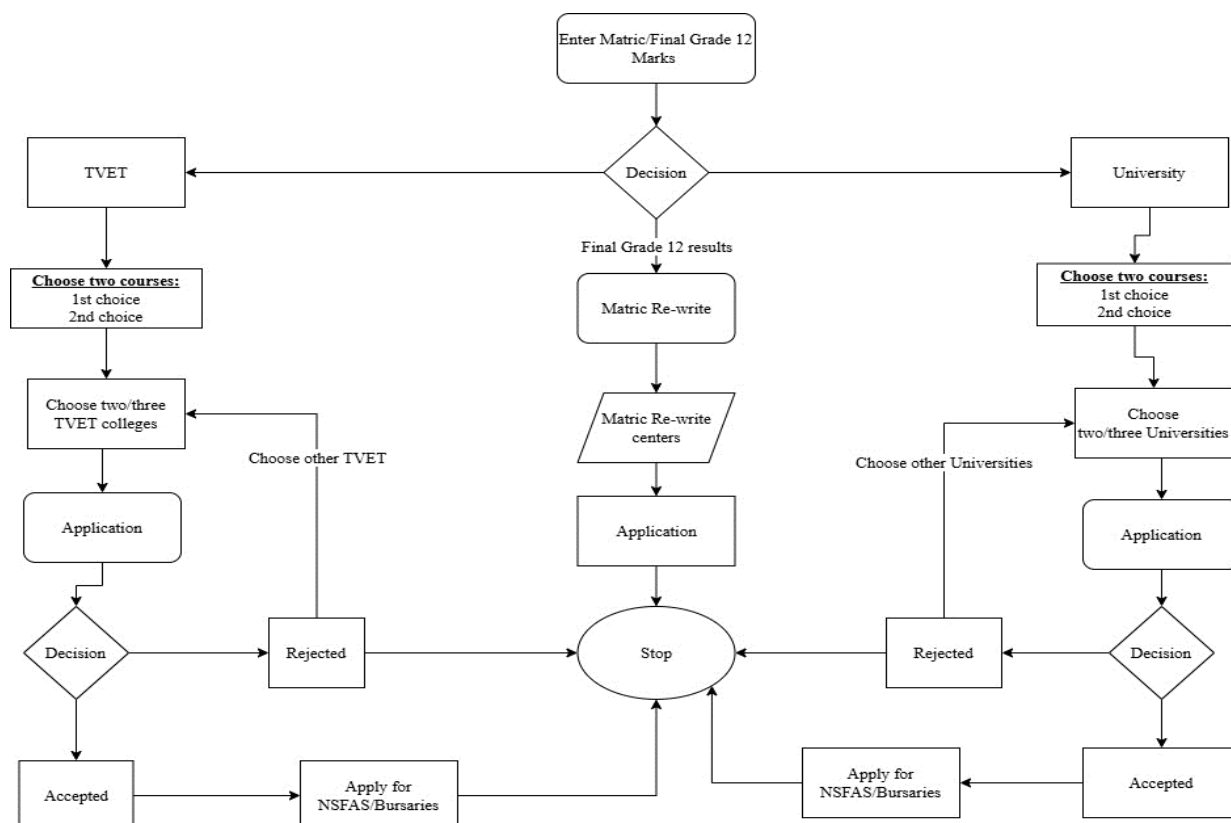


Figure 1: Decision making framework for choosing higher education offerings *University*

This section of the framework introduces a guided, decision-support interface that prompts learners to select two preferred academic programmes tailored as first and second choices offered by one more university, among the 26 accredited South African universities. Based on these selections, the system dynamically filters and displays institutions offering the chosen programmes. Learners are then prompted to select a minimum of two to three institutions, with the option to expand their selection, thereby optimizing application costs and increasing placement opportunities.

The framework further streamlines the application process by facilitating direct submissions to the selected institutions. In cases where an applicant is not accepted by the institution for their initial choices, the system triggers an adaptive re-selection mechanism, by prompting the learner to consider alternative institutions that offer the same or similar programmes. Upon successful completion of the university application phase, the framework transitions the user to a financial aid section. This section provides tailored guidance on applying for NSFAS and other relevant bursaries, based on the learner's selected field of study. By integrating programme selection, institutional matching, and funding application support into a unified workflow, the framework enhances accessibility, while reducing procedural friction, and facilitate informed, cost-effective decision-making for prospective students, particularly those from marginalized backgrounds.

#### TVET

This section of the framework is designed to guide prospective learners through a structured selection and application process for TVET colleges in South Africa. Prospective learners are prompted to identify two preferred programmes, classified as first and second choices from the national catalogue of TVET colleges. Based on these selections, the framework filters and displays a list of TVET that offer the chosen programmes. To optimize application efficiency and reduce associated application costs, users are encouraged to select a minimum of two to

three TVET colleges, with the flexibility to expand their selection based on personal or geographic preferences. The system then facilitates the submission of applications to the selected institutions through an integrated placement assistance interface.

In the event of non-acceptance at the initially selected institutions, the system activates a contingency plan, prompting the learner to reselect from alternative TVET colleges offering similar or closely aligned programmes. This mechanism ensures continuity in the application process and minimizes the risk of exclusion due to limited institutional space availability. Upon completion of the application process, the system transitions the learner to apply for financial aid support. This component provides personalized guidance on applying for NSFAS and other bursary opportunities, aligned to the learner's selected field of study.

#### *Matric Re-write*

For learners who do not meet the minimum entry requirements for either university or TVET programmes, the system activates an alternative academic pathway to improve final grade 12 results. Leveraging geographic location data and user preferences, the system prompts the learner to select two to three accredited matric re-write centres within their geographic proximity. This recommendation is designed to optimize accessibility and reduce logistical barriers, particularly for students in rural areas.

The system not only facilitates centre selection but provides real-time information on registration deadlines, subject offerings, and support services available at each centre. By integrating this fallback mechanism into the broader decision-making framework, the platform ensures that academically excluded learners are not left behind but are instead redirected toward structured opportunities for academic improvement and re-entry into the post-matric education and training landscape.

## **RESULT AND DISCUSSION**

This study confronts persistent equity challenges in South Africa's post-matric education and training framework by introducing a data-informed, learner-centric decision-making framework for higher education offerings. Recognizing that access to higher education is an important driver of social mobility and economic inclusion, the proposed framework is designed to bridge systemic inequalities that disproportionately affect historically disadvantaged students. The framework employs a triaged, algorithmic approach that guides prospective learners through a three-dimensional educational pathway, that is, university, TVET colleges, and matric re-write based on their academic performance and eligibility.

Integrating programme selection, institutional matching, application facilitation, and funding navigation, the framework further consolidates what is traditionally a fragmented and opaque process into a streamlined, accessible digital experience. Additionally, the proposed framework not only reduces procedural ambiguity but further enhances decision-making processes by delivering real-time, context-specific information to first-generation applicants who often lack access to reliable guidance. Moreover, this framework potentially offers a scalable solution to increase access to higher education and improve throughput across the sector, by embedding equity, usability, and responsiveness into its design.

## **CONCLUSION AND SUGGESTION**

In conclusion, the development of a targeted, data-driven decision-support framework represents a transformative intervention within South Africa's higher education landscape. By operationalizing equity through technology, the framework addresses critical higher education

access barriers and empowers learners with actionable awareness tailored to their academic needs and socioeconomic contexts. Future studies should focus on piloting the framework in secondary schools, particularly in disadvantaged communities, to assess its longitudinal impact on higher education placement outcomes, and learner confidence on the framework. Iterative refinements of the framework could also incorporate integrated career guidance modules and psychosocial support features, recognizing the multifaceted approach to post-matric decision-making.

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