

The necessity of external examination for university admissions in the United States and the United Kingdom

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ABSTRACT: External examinations, such as the SAT, ACT, AP and A-Level play a significant role in the university admissions process. However, there is ongoing debate regarding the usefulness and necessity of these examinations in predicting university success and facilitating admissions decisions. In this study, the authors examine the effect of external examinations in university admissions by collecting data from external examination providers and performing statistical analysis to identify patterns and trends in the data. The data suggest that external examinations are useful predictors of university success and facilitate the admissions process, but contrary to popular belief, the data also show that more than half of undergraduate university students in the US and the UK between 2017 and 2022 have not sat for any external examination. These findings contribute to the ongoing debate on the role of external examinations in university admissions and inform policy decisions regarding admissions requirements.

INTRODUCTION

The selection process for university admissions is a highly debated topic, with many arguing that external examinations, such as Advanced Placement (AP) and Advanced-Level (A-Level) are necessary for evaluating a student's academic abilities. External examinations are standardised tests that are typically administered by external bodies and are used to evaluate students' knowledge and skills in a particular subject. While some argue that external examinations provide a fair and objective assessment of a student's abilities, others argue that they are an inadequate measure of a student's overall academic potential.

In this article, the authors aim to examine the necessity of external examinations for university admissions. In the article, the authors explore the percentages of students that are admitted to universities in the United States (US) and the United Kingdom (UK) without sitting for any external examination, and therefore provide a comprehensive understanding of the role of external examinations in university admissions and offer alternative pathways to the admissions process.

LITERATURE REVIEW

The literature is packed with papers that investigate the effects of external examinations on the performance of students in universities. Many papers support the need of external examinations in university admissions to filter students and predict their success. For example, a study by Wyatt et al examines the relationship between AP examination performance and subsequent performance in post-secondary coursework. The study is based on data from 13,906 students who took AP examinations and then attended a four-year college. The results showed that 100% of AP examination takers who earned scores of 3 or higher performed just as well if not better than non-AP examination takers who took the introductory college course on campus. [1]. AP examination takers who earned scores of 3 or higher were more likely to earn higher grades in subsequent college courses, regardless of the subject of the AP examination they took [1].

Another work by Ewing et al examines the relationship between students who take and pass multiple AP examinations and their likelihood of double-majoring in college [2]. The study found that students who earned scores of 3 or higher on multiple AP examinations (1 AP, 2 APs, 3 APs, 4 APs or more) had a higher probability to double-major in college (8.2%, 10.2%, 12.2%, 16.3%, double-majoring respectively) than students who did not take any AP examinations or who did not earn passing scores on them (5.7%) [2].

Additionally, Resnick and Schantz explored the complex relationships between testing, teaching and learning in the education system. The authors argue that testing can have a significant impact on what and how students learn, and that teachers must be aware of this impact and work to ensure that tests are used in ways that support learning goals [3].

On another front, many authors questioned the disparities that are present with these external examinations and investigated the impact that these disparities have on the chances of acceptances in universities. For example, in his paper, Judson analysed the growth and achievement trends in science and mathematics AP examinations over time [4]. The study found that the percentage of high school students taking these examinations has increased significantly from 18.9% in 2003 to 33.2% in 2013, and that overall achievement has improved. However, the study also found that there are significant disparities in AP examination participation and achievement among different student groups [4]. Also, Kolluri reviewed the research on the effectiveness of AP programmes and their accessibility to underrepresented student populations [5]. The article concludes that while AP programmes can have significant benefits for students, efforts are needed to address issues of equity and accessibility [5].

Moreover, in the book *Public Examinations Examined* by Kellaghan and Greaney, the authors examine the use and impact of public examinations in education systems around the world. The authors argue that while these examinations can have important benefits, such as promoting accountability and measuring student achievement, they also have limitations and can be subject to bias and other issues [6].

Finally, Sammons et al explored the drivers of academic success for bright but disadvantaged students in England, using data from a longitudinal study of AS and A-Level outcomes. The study found that family background, educational resources and school quality are all important factors that can impact academic success [7].

To put in brief, the literature suggests that while external examinations may be a useful tool for evaluating academic potential, they may also have limitations in terms of their fairness and inclusivity. Further research is needed to explore alternative methods of evaluating student abilities and potential, while also addressing the potential biases and limitations of external examinations in the university admissions process.

METHODOLOGY

The objective of this study is to examine the role of external examinations in university admissions. In particular, the aim of the authors is to investigate the necessity of external examinations, such as the Scholastic Aptitude Test (SAT), AP, American College Testing (ACT) and Advanced Level (A-Level) in the university enrolment process.

To achieve this objective, data were collected from external examination providers, such as College Board (for AP and SAT examinations), Cambridge Assessment International Education (for A-Level examinations) and American College Testing (for ACT examinations), and statistical analysis was performed to identify patterns and trends in the data. Additionally, data were collected for undergraduate university admissions in both the US and the UK between 2017 and 2022.

The authors only included data from external examinations that are commonly used for university admissions, such as the AP, ACT and SAT in the United States, and the A-Level examinations in the UK. Examinations that are not widely accepted by universities or that have a limited scope of assessment were excluded.

The data used in this research were collected from the following sources:

1. College Board provides annual data reports on AP results and statistics [8].
2. College Board provides annual data reports on SAT results and statistics [9].
3. ACT Nation report provides annual statistical reports on ACT results and data [10].
4. Joint Council for Qualifications (JCQ) provides annual statistical reports on A-Level results and statistics [11].
5. NSC Research Center provides annual data reports on university enrollments across the US [12].
6. HESA provides annual data reports on university enrollments across the UK [13].

DATA ANALYSIS

The collected data from external examination providers were analysed using descriptive statistics to summarise the data and identify patterns and trends. Data visualisation techniques, such as graphs and tables, were also utilised to present the findings in a clear and accessible manner. These techniques help to highlight the key patterns and trends in the data, and provide a visual representation of the findings.

In the first case study, the authors investigated the impact imposed by the top three external examinations in the US on the total undergraduate university acceptances. For this purpose, data were collected for university enrolments in the US and the number of students that sat for the AP, ACT or SAT examinations between 2017 and 2022. Knowing the exact number of unique students that sat for each examination in a particular academic year is close to impossible - some students might take more than one test or some students might repeat the tests over many years. Thus, for analytical purposes, the authors will assume that the numbers collected from the mentioned sources represent unique students that have sat for only one of the examinations, once. This assumption encompasses, to some extent, the majority of the students that are applying for undergraduate studies in the US universities and gives a rough estimate around the actual values.

A second assumption made is that these three external examinations (AP, ACT and SAT) represent all external examinations in the US. This assumption was based on the fact that the number of students that sat for the other external examinations is trivial when compared to the number of the students that sat for the external examinations mentioned in this study. Table 1 summarises the data collected from the NSC Research Center and the College Board.

Table 1: The number of students that sat for the AP, ACT or SAT between AY2017 and AY2022 as compared to the total number of students enrolled in US universities.

Academic year	Undergraduate enrolment in the US	Students sitting for AP in the US	Students sitting for ACT in the US	Students sitting for SAT in the US	Students not sitting for AP, ACT or SAT
2017	17,001,758	2,741,426	2,030,000	1,715,481	10,514,851
2018	16,434,965	2,808,990	1,915,000	2,136,539	9,574,436
2019	16,284,724	2,825,710	1,783,000	2,220,087	9,455,927
2020	15,686,317	2,642,630	1,670,000	2,198,460	9,175,227
2021	15,144,221	2,548,228	1,295,000	1,509,133	9,791,860
2022	15,050,669	2,659,914	1,350,000	1,737,678	9,303,077

The percentages of students that sat for the AP, SAT or ACT in a certain academic year as compared to the total number of students that enrolled in undergraduate studies in the same academic year were calculated and are presented in Figure 1. As the data show, the percentage of students that did not sit for any of the three major external examinations ranged between 58% and 65% between 2017 and 2022. This finding suggests that nearly two-thirds of undergraduate students that enrolled in the US universities between 2017 and 2022 did not sit for any of the external examinations, but were accepted to universities based on other criteria. It should be noted that, according to the gathered data, 50% to 55% of students that sat for the mentioned external examinations achieved grades that enabled them to be accepted in universities, hence, the remaining percentage did not. Therefore, the percentage of students that were accepted into universities by either not applying to external examinations or by applying to external examinations and not meeting the required criteria is much greater.

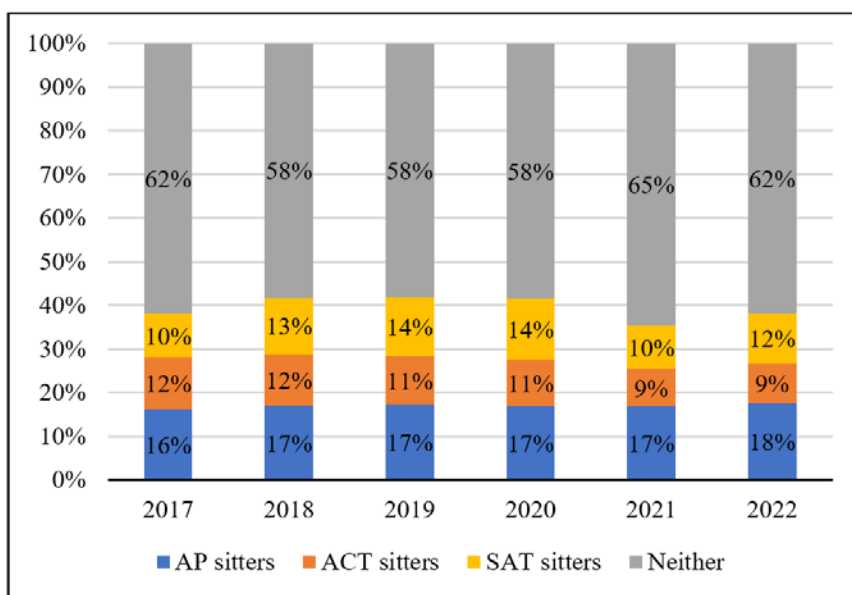


Figure 1: The percentages of students sitting for the AP, ACT and SAT per academic year.

The next question to be asked is whether there exists a pattern in the percentage of students sitting for external examinations in the mentioned years. By comparing the yearly changes in the percentages of students that are sitting for the AP, ACT, SAT between 2017 and 2022 (Figure 2), no clear trend can be noticed. Most percentages fluctuate between -3% and 3%. This indicates that the percentage of students sitting for external examinations in the US has not suffered any drastic decline or increase since 2017.

In the second case study, the authors investigated the inevitability of external examinations in university acceptances across the UK. In the UK, external examinations are formal assessments that are administered to students by an external examining body, rather than by their school or university (similar to the AP, ACT and SAT). The main external examination in the UK is the A-Level examination. These examinations are taken by students at the age of 18, after completing their secondary education. A-Levels are widely used to determine a student's readiness for higher education, as they are often a requirement for admission to universities in the UK.

Data about the number of students that enrolled into undergraduate studies in the UK were gathered and compared to the number of students that sat for the A-Level examinations in the UK between 2017 and 2022. Table 2 summarises the data.

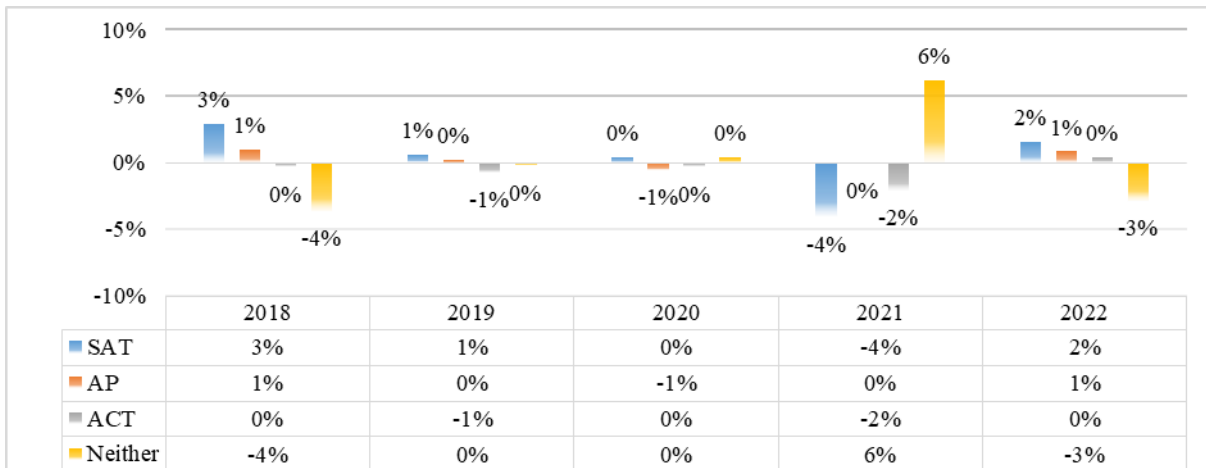


Figure 2: The change in percentages of students sitting for the AP, ACT and SAT per academic year.

Table 2: The number of students that sat for the A-Level examinations between 2017 and 2022 as compared to the total number of students enrolled in UK universities.

Academic year	Undergraduate enrolment in the UK	Students sitting for A-Level in the UK	Students not sitting for A-Level in the UK
2017	1,818,565	828,355	990,210
2018	1,832,735	811,777	1,020,958
2019	1,853,840	801,002	1,052,838
2020	1,890,020	781,029	1,108,991
2021	2,008,525	824,718	1,183,807
2022	2,042,310	848,910	1,193,400

Similar to the first case study, the authors made several assumptions before analysing the given data. The first assumption is that the A-Level examinations are the only external examinations that are required in the UK. In fact, other external examinations exist, such as the International Baccalaureate (IB), Cambridge Pre-U and Graduate Management Admission Test (GMAT), to name a few. However, the most common external examination, by far, is the A-Level. The percentages of students that were enrolled in UK universities after having sat for the A-Level examinations between 2017 and 2022 were calculated and are presented in Figure 3.

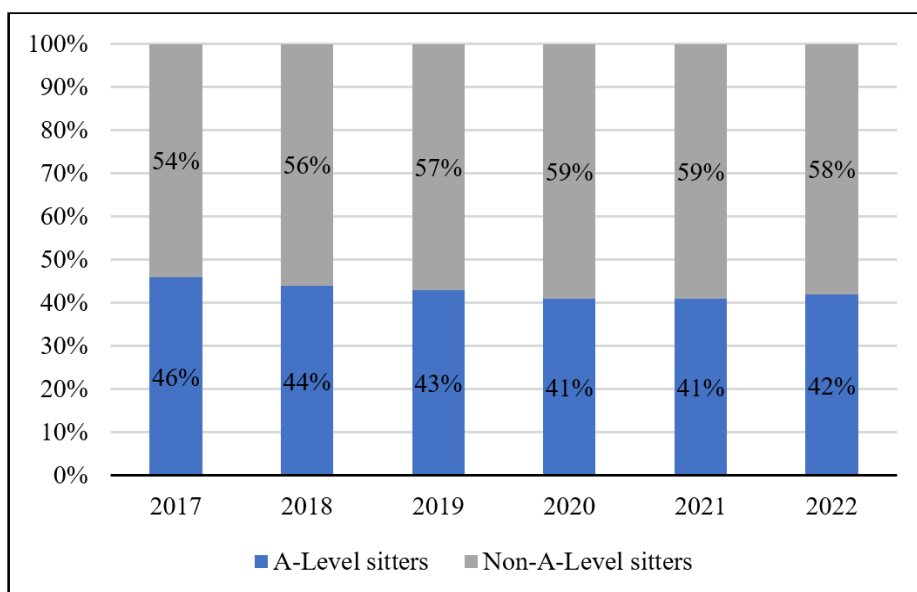


Figure 3: The percentages of students sitting for the A-Level examinations per academic year.

As the figure shows, the percentage of students enrolled in UK universities after sitting for the A-Level examinations is between 41% and 46% throughout the mentioned years. This translates that more than half of the undergraduate students in the UK universities were accepted without sitting for the A-Level examination. Similarities were noticed between the percentages of students sitting for external examinations in both the US and the UK; the ranges of these numbers are 35%-42% and 41%-46%, respectively.

As for the change in the percentage of students sitting for the A-Level examination in the UK between 2018 and 2022, the authors highlight a declining pattern between 2018 and 2020 by a total of 5% from 2017. No change was noted during 2021 and an increase of 1% was observed in 2022 (Figure 4). The data suggest that the desire for external examinations in UK students is not increasing with time, but on the contrary, the net change between 2017 and 2022 is -4%. However, the authors are cautious when making any generalisation from these data for the fact that the Covid-19 pandemic was taking place during these years, which might affect the data.

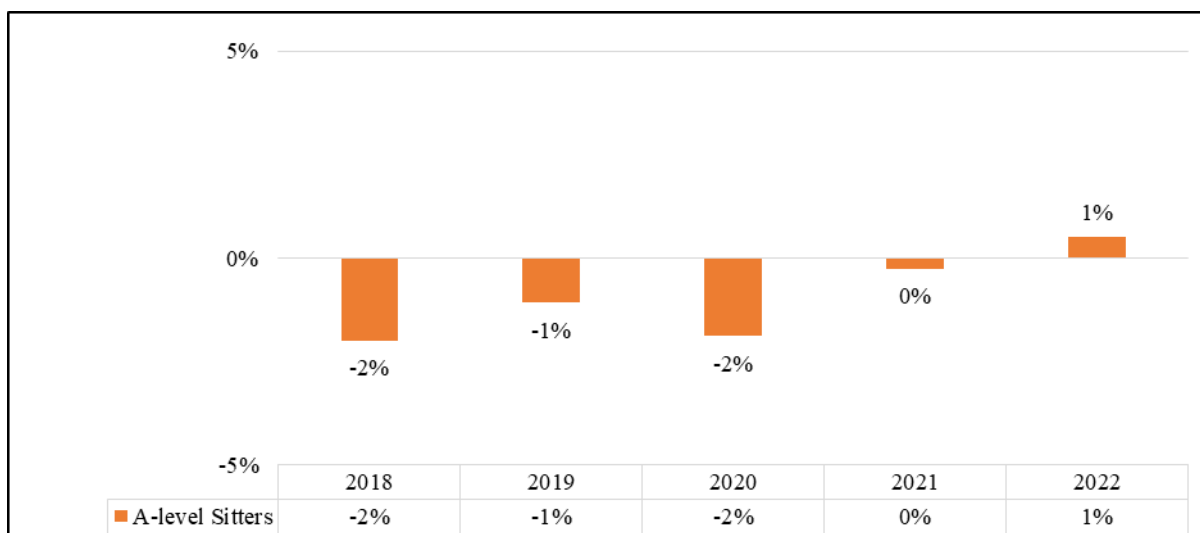


Figure 4: The change in percentages of students sitting for A-Levels per academic year.

CONCLUSIONS

The findings of this study highlight the fact that external examinations, such as the AP, ACT and SAT are not as widely sat for by undergraduate students in the US as one might expect. In fact, the results suggest that more than 58% of undergraduate students in the US do not sit for such examinations. This could be due to a variety of factors, such as students choosing to pursue alternative routes to higher education or simply not feeling prepared for these examinations. Similarly, the research also suggests that more than 54% of undergraduate students in the UK do not sit for external examinations, such as the A-Level. This may be due to different factors than in the US, such as the availability of alternative qualifications or a different approach to higher education.

There are several alternative routes to higher education that students in the US and the UK may choose to pursue instead of taking external examinations, such as the AP, ACT, SAT or A-Level. These alternative routes can include:

Direct entry programmes: some universities in the US offer direct entry programmes that allow students to apply directly to a specific programme or major without having to take standardised tests. This can be particularly helpful for students who have a strong academic record and a clear idea of their desired course of study.

University placement tests: some universities in the US may require students to take a placement test to determine their level of proficiency in subjects like mathematics and English. These tests are typically used to place students in appropriate courses and may be used *in lieu* of external examinations for admission purposes.

Personal statement/interview: in the UK, many universities require students to submit a personal statement or attend an interview as part of the application process. These components of the application are designed to allow students to showcase their interests, experiences and strengths in a more personal way, which can be particularly helpful for students who may not perform well on standardised tests.

Prior learning assessment: some universities in the US may offer prior learning assessment (PLA) programmes, which allow students to earn credit for previous learning experiences, such as work experience, military training or non-credit courses. This can be a way for students to demonstrate their knowledge and skills without relying on external examinations.

Portfolio review: in some creative fields, such as art and design, universities may require students to submit a portfolio of their work for review as part of the application process. This can be a way for students to showcase their talents and potential for success in these fields.

Overall, the findings of this article highlight the need for further investigation into the reasons why students choose not to sit for external examinations in both the US and the UK. In addition, further investigation should be conducted about the percentage of students that have enrolled to universities through the alternative routes mentioned earlier and to study their performance during their higher education. If the data show that these category of students are excelling in their studies, then this might degrade the necessity of external examinations during the enrolment process and further back up alternative routes.

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