



Recent case study involving:

**We Believe In Education Pte Ltd**

**Target market in the USA**

Brought to you by:  
**Team Jaguar**



# Executive Summary



## Preamble

- **We Believe In Education Pte Ltd** (“company”) is a private tuition centre based in Singapore.
- In view of its resounding success in Singapore, the company is keen to expand in the USA.
- There are 2 major examinations in the USA, i.e. SAT and ACT.
- As part of its pilot programme (though with limited budget), the company wishes to penetrate into the USA cautiously, i.e. beginning with the provision of either SAT or ACT tuition service, and focusing on certain states.
- As it is still relatively unknown in the USA, the company is looking to invest in advertising. It is also allocating budget to award scholarships/financial aid to deserving students as publicity.
- Team Jaguar’s advice is sought on selecting **which programme** to pursue and **which states/areas should the group target**.

# Executive Summary



## Problem statement

- To analyse which tuition programme to offer as part of the company's pilot programme, i.e. should the company target SAT or ACT tuition programme?
- To identify which states are the most promising for the company to advertise its services (including offering scholarship/financial aid)?

## Assumptions:

- *The market for private education providers is not yet saturated;*
- *The analysis does not take into account unprecedented events such as globalwide disaster (COVID-19 pandemic);*
- *There will not be major changes in government or state policies in the near term.*

# Methodologies



## Understand the goal / objectives

- Focus on which programme to offer, i.e. whether SAT or ACT?
- Which state should the company channel its advertising efforts to?

## Data import

- Relevant data imported:
  - SAT/ACT participation rate and scores by states from 2017-2019
- Year 2020 data was excluded due to unprecedented year (i.e. COVID-19 pandemic and economic downturn) which may skew data

## Data cleaning

- Inconsistencies and missing values within datasets are fixed
- Erroneous data are removed

## Data exploration / visualisation

- Visually analyse the data, i.e. graphs, charts for ease of communicating insights

## Conclusion

- **Based on our analysis, the company should:**

→ **Begin with the offering of SAT tuition services**

→ **Focus on advertising in states with highest and lowest SAT participation rates**

# Brief Overview of SAT and ACT



- Generally cover similar topics
- Most colleges have no preference
- Level of difficulty approximately the same

	SAT	ACT
<b>Purpose</b>	College admission and scholarships	
<b>Test structure</b>	<ul style="list-style-type: none"><li>• Reading</li><li>• Writing</li><li>• Language</li><li>• Math</li><li>• Essay (Optional) – test on comprehension of a source text</li></ul>	<ul style="list-style-type: none"><li>• English</li><li>• Math (calculators are generally allowed)</li><li>• Reading</li><li>• Science (for critical thinking skills), Reasoning</li><li>• Essay (Optional) – test on evaluation skills and analysing complex issues</li></ul>
<b>Scoring scale</b>	400 - 1,600	1 - 36
<b>Length</b>	Approx. 3 - 4 hours (depending on essay)	

# Top and bottom states based on Participation Rates



- States with lowest participation rates in ACT, tend to observe higher participation rates in SAT; the converse applies.
- States with high participation rates in both ACT and SAT (>50%) include: Florida, Hawaii.

Lowest participation rates in ACT (2017 - 2019)	Highest participation rates in ACT (2017 - 2019)	Lowest participation rates in SAT (2017 - 2019)	Highest participation rates in SAT (2017 - 2019)
<ul style="list-style-type: none"><li>• Maine</li><li>• New Hampshire</li><li>• Delaware</li><li>• Rhode Island</li><li>• Pennsylvania</li><li>• Vermont</li><li>• Massachusetts</li><li>• Virginia</li></ul>	<ul style="list-style-type: none"><li>• Alabama</li><li>• Arkansas</li><li>• Kentucky</li><li>• Louisiana</li><li>• Mississippi</li><li>• Montana</li><li>• Nevada</li><li>• North Carolina</li><li>• Oklahoma</li><li>• Tennessee</li><li>• Utah</li><li>• Wisconsin</li><li>• Wyoming</li></ul>	<ul style="list-style-type: none"><li>• North Dakota</li><li>• Mississippi</li><li>• Iowa</li><li>• Utah</li><li>• South Dakota</li><li>• Nebraska</li><li>• Wisconsin</li><li>• Minnesota</li><li>• Wyoming</li></ul>	<ul style="list-style-type: none"><li>• District of Columbia</li><li>• Michigan</li><li>• Connecticut</li><li>• Delaware</li><li>• New Hampshire</li><li>• Maine</li><li>• Idaho</li><li>• Rhode island</li></ul>

## Findings

- ❖ *States with 100% participation rates in ACT or SAT have made it mandatory for students to take the respective test statewide.*

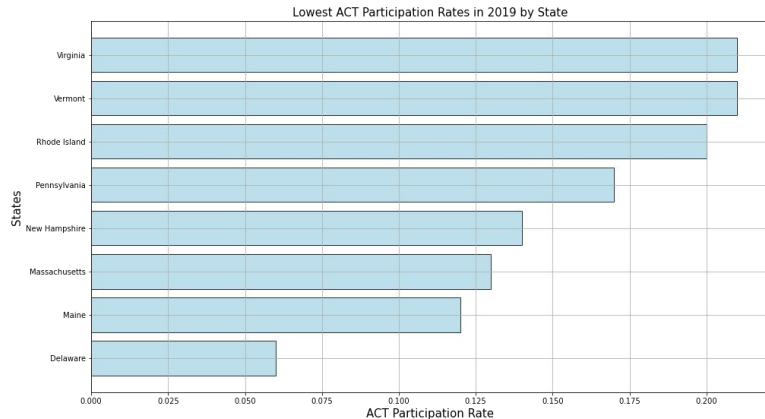
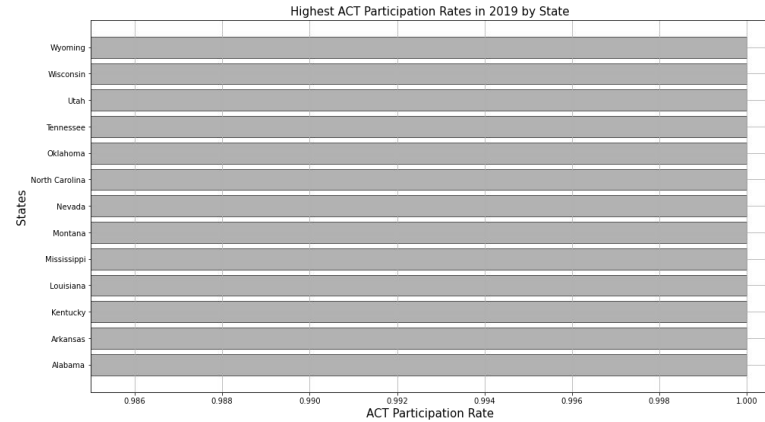
# Top and bottom states based on Participation Rates (ACT)



Lowest participation rates in ACT (2017 - 2019)	Highest participation rates in ACT (2017 - 2019)
<ul style="list-style-type: none"> <li>• Maine</li> <li>• New Hampshire</li> <li>• Delaware</li> <li>• Rhode Island</li> <li>• Pennsylvania</li> <li>• Vermont</li> <li>• Massachusetts</li> <li>• Virginia</li> </ul>	<ul style="list-style-type: none"> <li>• Alabama</li> <li>• Arkansas</li> <li>• Kentucky</li> <li>• Louisiana</li> <li>• Mississippi</li> <li>• Montana</li> <li>• Nevada</li> <li>• North Carolina</li> <li>• Oklahoma</li> <li>• Tennessee</li> <li>• Utah</li> <li>• Wisconsin</li> <li>• Wyoming</li> </ul>

*Average lowest participation rate: 18%*

*Average highest participation rate: 100%*



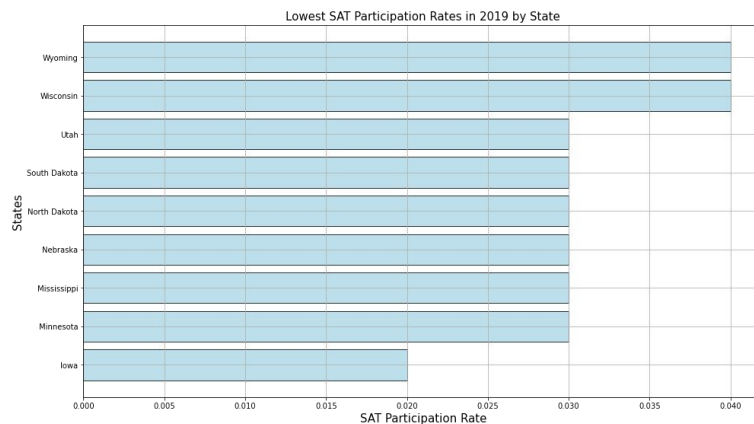
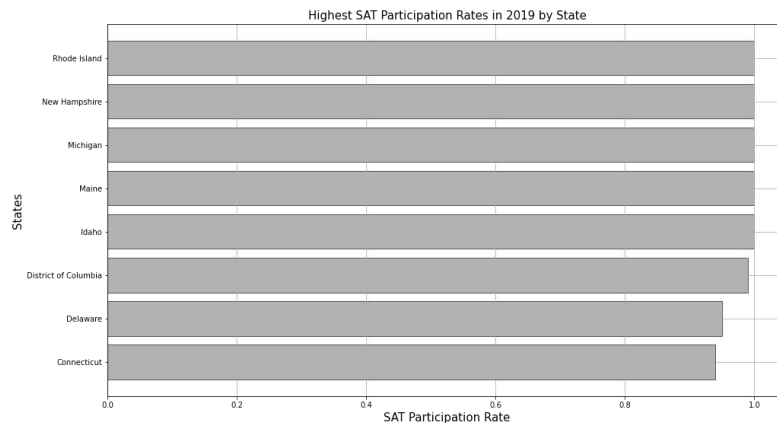
# Top and bottom states based on Participation Rates (SAT)



Lowest participation rates in SAT (2017 - 2019)	Highest participation rates in SAT (2017 - 2019)
<ul style="list-style-type: none"> <li>• North Dakota</li> <li>• Mississippi</li> <li>• Iowa</li> <li>• Utah</li> <li>• South Dakota</li> <li>• Nebraska</li> <li>• Wisconsin</li> <li>• Minnesota</li> <li>• Wyoming</li> </ul>	<ul style="list-style-type: none"> <li>• District of Columbia</li> <li>• Michigan</li> <li>• Connecticut</li> <li>• Delaware</li> <li>• New Hampshire</li> <li>• Maine</li> <li>• Idaho</li> <li>• Rhode Island</li> </ul>

*Average lowest participation rate: 3%*

*Average highest participation rate: 97%*





# Overall trend of SAT & ACT participation rate (2017 - 2019)

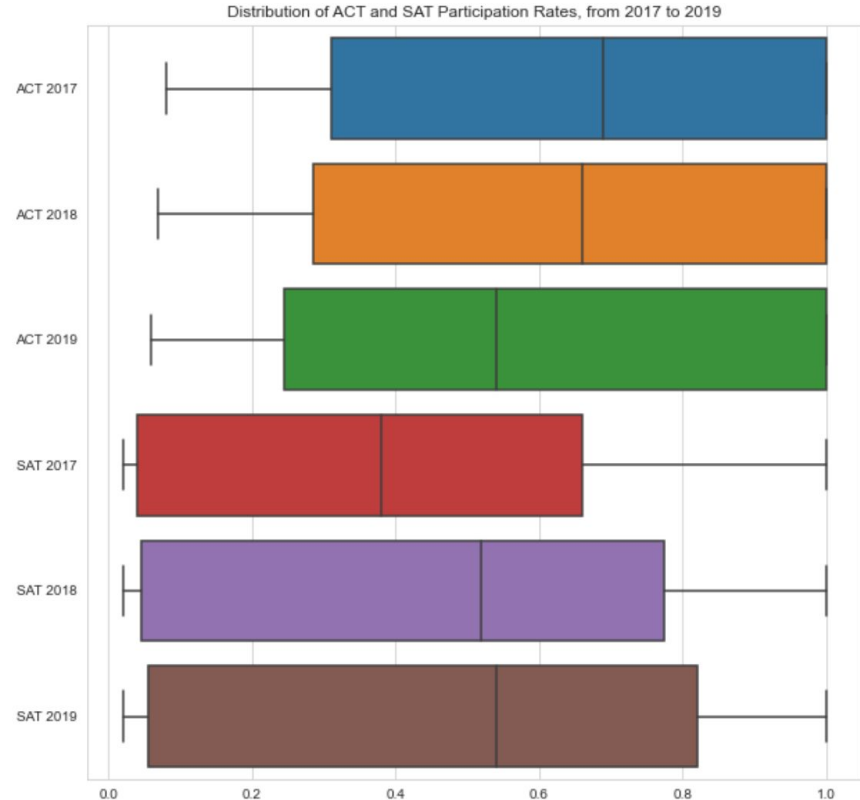


## Observations:

- SAT - Mean yearly participation rate is **increasing (compound annual growth rate: 10.9%)**
- ACT - Mean yearly participation rate is **decreasing (compound annual growth rate: -5.6%)**
- More states are implementing statewide SAT as compared to ACT. These include:
  - Colorado
  - Illinois
  - Rhode Island
  - West Virginia

## Recommendation

- ❖ Focus on providing tuition programme in SAT, due to increasing mean participation rate from 2017 - 2019



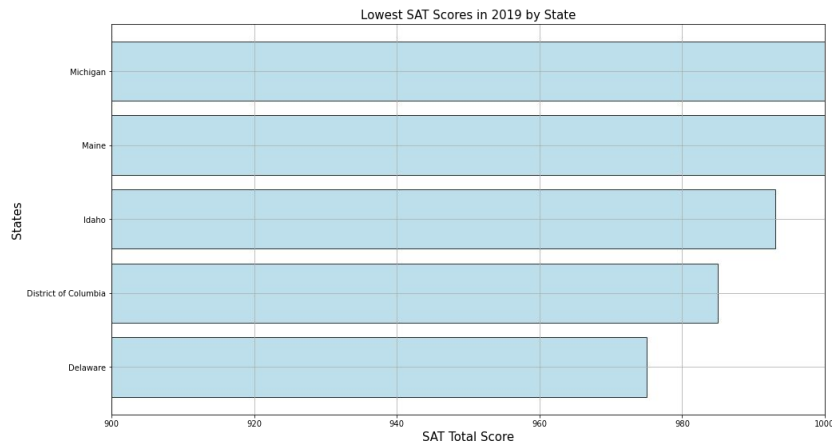
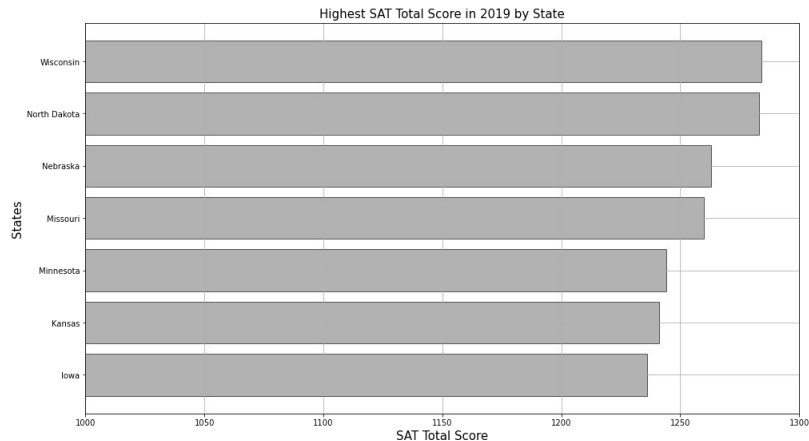
# Top and bottom states based on Total Score (SAT)



Lowest Total Score in SAT (2017 - 2019)	Highest Total Score in SAT (2017 - 2019)
<ul style="list-style-type: none"> <li>• District of Columbia</li> <li>• Delaware</li> <li>• Idaho</li> <li>• Michigan</li> <li>• Maine</li> </ul>	<ul style="list-style-type: none"> <li>• Minnesota</li> <li>• Wisconsin</li> <li>• Iowa</li> <li>• Missouri</li> <li>• Kansas</li> <li>• North Dakota</li> <li>• Nebraska</li> </ul>

*Average lowest total score: 996*

*Average highest total score: 1268*

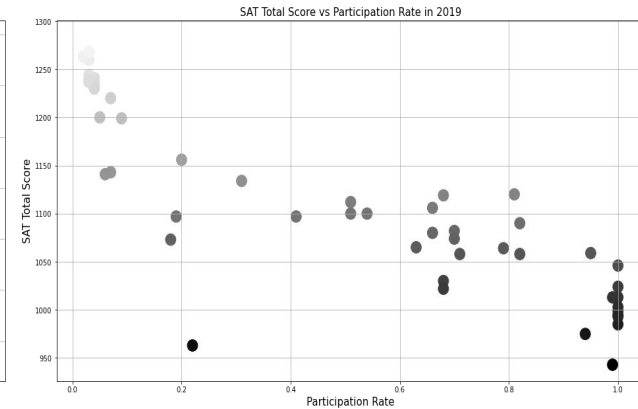
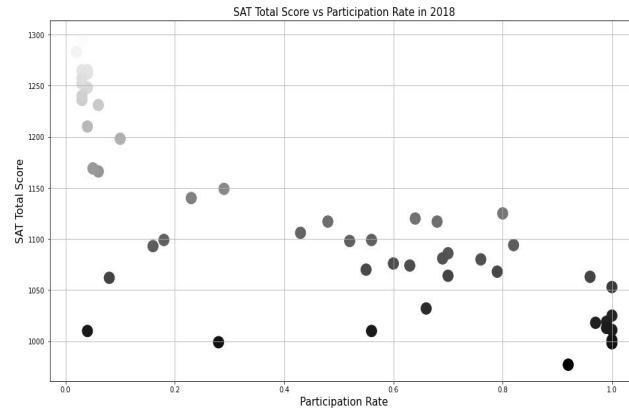
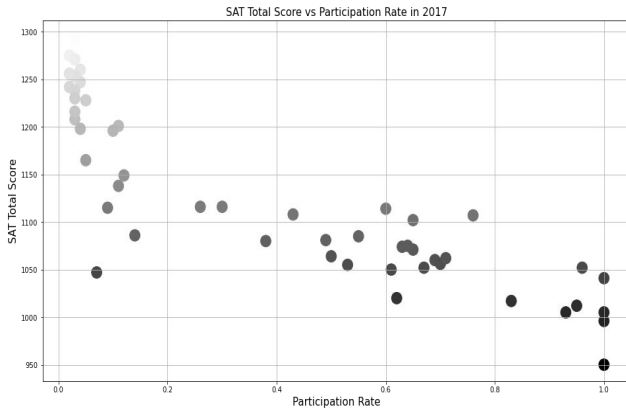


# SAT scores vary inversely with Participation Rates



## Observations:

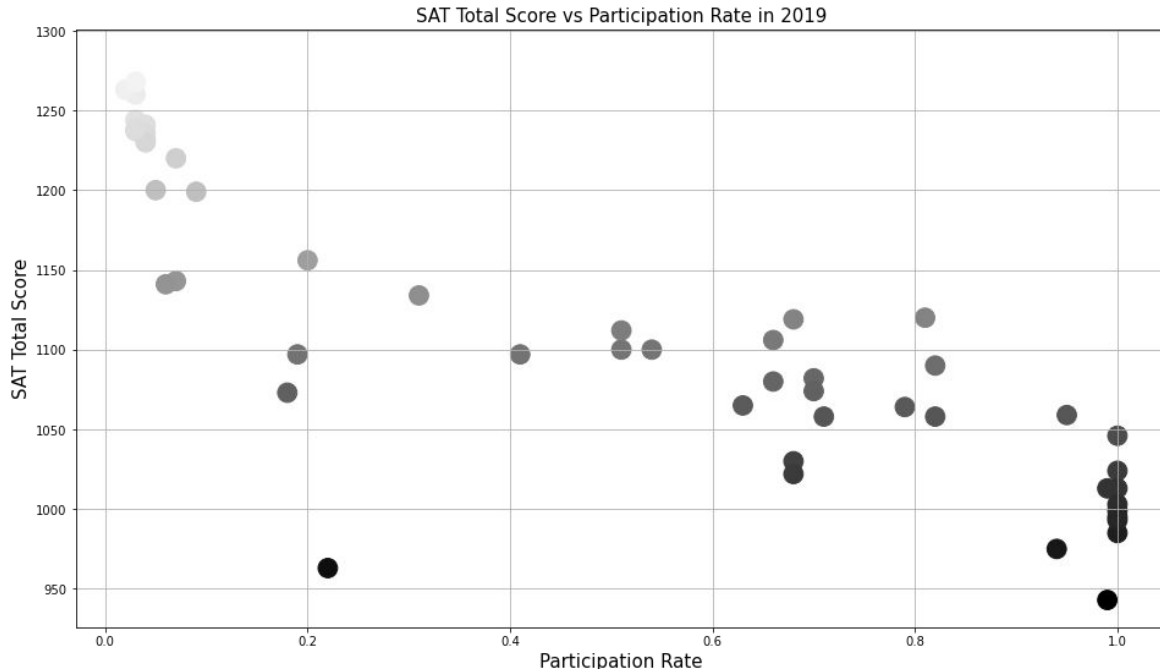
- States with higher total scores in SAT, tend to observe lower participation rates; the converse applies.
- Some of these states include: Minnesota, Mississippi, Wisconsin, etc. where students are not required to take SAT.
  - Inherently, a selection bias exists when participation is optional.



# SAT scores vary inversely with Participation Rates



- States with higher total scores in SAT, tend to observe lower participation rates; the converse applies.
  - When participation rate is low (<20%), SAT total score remains on the higher end (>1150).
  - When participation rate is high (>80%), SAT total score remains less than 1100.



# Conclusion



## Focus on SAT tuition programme

Average participation rate for SAT is growing yearly from 2017-2019 (10.9%) vs negative growth for ACT (-5.6%)

## Focus on offering SAT tuition programme at these states

<b>Target market 1:</b>  <b>Highest SAT participation rates</b>  <b>Lowest SAT scores*</b>	<u>Reasons:</u> 1) SAT is mandated in these states; 2) These states tend to have lower average scores;  Hence, there is a potential for stable and high demand for private tuition, in a bid to increase SAT scores and opportunity to enrol in prestigious universities.	District of Columbia* Michigan* Connecticut Delaware* New Hampshire Maine* Idaho* Rhode island
<b>Target market 2:</b>  <b>Lowest SAT participation rates</b>  <b>Highest SAT scores^</b>	<u>Reasons:</u> 1) As SAT is not mandatory in these states, there is a likelihood that many eligible students have yet to participate, i.e. lack of awareness. Hence, there may be a potential large untapped market, when students become aware of the benefits of SAT.  2) These states tend to have higher mean total scores for SAT. Thus, scholarships/financial aid may be channeled to these states as a mode for publicity, encouraging even more “deserving” students to participate in SAT.	North Dakota^ Mississippi Iowa^ Utah South Dakota Nebraska^ Wisconsin^ Minnesota^ Wyoming



# THANK YOU!

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## Appendix - Limitations



- More details on socioeconomic status (i.e. per capita income per state) and whether the states offer free administration for SAT (i.e. whether subsidy is inclusive of both private tuition and exam fees), will be crucial in determining students' willingness to participate in SAT.
- The analysis can be more robust, if information on product differentiation catered to various group of students from various background and academic capability, are available.

# Appendix - Participation Rates vary inversely across ACT and SAT

- While the distributions for ACT and SAT participation rates have not changed significantly from 2017 to 2019, it can be observed that:
  - ACT** has few states with lower than 10% participation rates;
  - SAT** has a larger group of states with lower-end participation rates (< 10%)

