



SINGAPORE UNIVERSITY  
OF SOCIAL SCIENCES

# ANL203

End-of-Course Assessment – July Semester 2021

## **Analytics for Decision-Making**

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### **INSTRUCTIONS TO STUDENTS:**

1. This End-of-Course Assessment paper comprises **FIVE (5)** pages (including the cover page).
2. You are to include the following particulars in your submission: Course Code, Title of the ECA, SUSS PI No., Your Name, and Submission Date.
3. Late submission will be subjected to the marks deduction scheme. Please refer to the Student Handbook for details.

<h3><b>IMPORTANT NOTE</b></h3>
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## **ECA Submission Guidelines**

*Please follow the submission instructions stated below:*

### **A - What Must Be Submitted**

*You are required to submit the following TWO (2) items for marking and grading:*

- *A Report (you **should submit this item first** as it carries the highest weightage).*
- *A .Zip File that contains the Tableau workbook (.twbx file) and the dataset (.xlsx or .xls file). Submit under ECA\_PPT link on Canvas.*

*Please verify your submissions after you have submitted the above TWO (2) items.*

### **B - Submission Deadline**

- *The TWO (2) items of Report, .Zip File are to be submitted **by 12 noon** on the submission deadline.*
- *You are allowed multiple submissions till the cut-off date for each of the TWO (2) items.*
- *Late submission of any of the TWO (2) items **will be subjected to mark-deduction scheme** by the University. Please refer to Section 5.2 Para 2.4 of the Student Handbook.*

### **C - How the (2) Items Should Be Submitted**

- *The Report: submit online to Canvas via TurnItIn (for plagiarism detection)*
- *The .Zip File that contains the Tableau workbook (.twbx file) and the dataset (.xlsx or .xls file):*
  - *Zip the Tableau workbook and the dataset*
  - *submit the .zip file online to Canvas*

### **D - Additional guidelines on file formatting are given as follows:**

#### **1. Report**

- *Please ensure that your Microsoft Word document is generated by Microsoft Word 2007 or higher.*
- *The report must be saved in **.docx** format.*

#### **2. .Zip File**

- *The Tableau workbook must be saved in **.twbx** format.*
- *The dataset must be included in the **.zip** file.*
- *The dataset must be saved in **.xlsx** or **.xls** format*

### ***E – Please be Aware of the Following:***

*Submission in hardcopy or any other means not given in the above guidelines will not be accepted. You do not need to submit any other forms or cover sheets (e.g. form ET3) with your ECA.*

*You are reminded that electronic transmission is not immediate. The network traffic may be particularly heavy on the date of submission deadline and connections to the system cannot be guaranteed. Hence, you are advised to submit your work early. **Canvas will allow you to submit your work late but your work will be subjected to the mark-deduction scheme.** You should therefore not jeopardise your course result by submitting your ECA at the last minute.*

*It is your responsibility to check and ensure that your files are successfully submitted to Canvas.*

### ***F - Plagiarism and Collusion***

*Plagiarism and collusion are forms of cheating and are not acceptable in any form in a student's work, including this ECA. Plagiarism and collusion are taking work done by others or work done together with others respectively and passing it off as your own. You can avoid plagiarism by giving appropriate references when you use other people's ideas, words or pictures (including diagrams). Refer to the APA Manual if you need reminding about quoting and referencing. You can avoid collusion by ensuring that your submission is based on your own individual effort.*

*The electronic submission of your ECA will be screened by plagiarism detection software. For more information about plagiarism and collusion, you should refer to the Student Handbook (Section 5.2.1.3). You are reminded that SUSS takes a tough stance against plagiarism or collusion. Serious cases will normally result in the student being referred to SUSS's Student Disciplinary Group. For other cases, significant mark penalties or expulsion from the course will be imposed.*

## SECTION A (Total 80 marks)

### Question 1

Sales of Singapore's food & beverage services was hit hard when the COVID-19 pandemic rages on. According to Retail Sales Index and Food & Beverage Services Index released by Singapore Department of Statistics in March 2021, the business fell by 24.7% in January 2021 on a year-on-year basis. As the industry is on a path of steady recovery, the big driver behind the rise of sales is from accelerated adoption of technology by business owners and customers. As many businesses made the switch to take-away and food delivery service and customer could remain more digitally engaged, it is critical to improve customer experience to retain existing customers and recruit new ones. Assume you are a business analyst who will advise F&B outlets on possible data mining initiative to leverage customer data and improve business performance.

Read the two articles below as a backdrop. You need to conduct research to develop your data mining initiative. You may contextualize the data mining initiative in a real or fictitious F&B business.

<https://www.straitstimes.com/business/fb-sector-on-recovery-path-thanks-to-digital-adoption>

<https://business.cornell.edu/hub/2021/05/07/re-electrified-after-circuit-breaker-singapores-restaurant-recovery/>

- (a) Briefly describe the F&B business (real or fictitious) including its mission and key products or services. Describe **one (1)** strategic objective that can be addressed using data mining and discuss at least **one (1)** data mining goal for the data mining initiative. (Use up to 200 words for part (a))  
(20 marks)
- (b) Recommend at least **one (1)** data mining technique to use and explain why it/they can be used to address the strategic objective and the data mining goal. Use up to 200 words for your answer.  
(20 marks)
- (c) Develop **one (1)** dashboard that includes at least **three (3)** professional graphical charts that provide useful information about the business problem you intend to address. Produce the charts and the dashboard using Tableau. You may use real or fictitious data. Provide a screenshot of each produced chart. Use up to 250 words to explain how the chart is produced and discuss why the charts are recommended.  
(20 marks)
- (d) Use up to 300 words to explain how various stages of CRISP-DM (except for the stage of business understanding) are applied in different parts of this data mining initiative.  
(20 marks)

## SECTION B (Total 20 marks)

<b>Tableau Workbook Evaluation Criteria</b>
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### Format and Style of Tableau Dashboard

 /6

- Layout, clarity of text elements, colour blends, graphical enhancements

### Clarity and Coherence

 /8

- Proper flow - title page, introduction, body, results, recommendations / discussion points, conclusion/summary; quick to understand, free from grammatical errors

### Creativity

 /6

- Ability to use creative elements to value-add to the presentation so as to enhance understanding and clarity of difficult concepts

### TOTAL

 /20

----- END OF ECA PAPER -----