

COMM1190 Industry-based Assessment 1: Individual Report



Week 4: 3:00 pm Friday (AEDT)



20%



A written report



Maximum word count of 750, excluding references, figures, tables, and appendices.



Via Turnitin on Moodle course site

Objective

The objective of this individual assessment is to evaluate your ability to conceptualize and solve analytics problems, your proficiency in R programming, and your capacity to provide business recommendations based on analytics results. In this assignment, you will conduct an exploratory data analysis as a data analyst. You are expected to analyze data using statistical and visualization techniques. This learning content has been covered in the course until the end of Week 3.

Company and Product Background

You have recently been employed as a data analyst for Amazing Sports Australia Ltd (ASAL), an online e-store. ASAL specializes in selling a wide range of branded and non-branded sports products, which are broadly categorized as (i) Equipment, (ii) Apparel, and (iii) Footwear. The company has recently launched a shopping mobile app and is concerned about its effectiveness in increasing sales and promoting its products. The management team aims to understand customer spending patterns and behavior with the ultimate goal of optimizing the app usage and enhancing sales.

About the task:

As a data analyst on this project, your primary task is to utilize R to explore the provided dataset and generate visualizations that assist ASAL's app managers in comprehending user behavior and engagement with the app. By using R, you will analyze the dataset and create exploratory visualizations to identify trends and patterns that can provide insights for marketing and sales strategies.

The company has provided you with data encompassing user demographic information (such as age, gender, etc.) and application usage information (such as number of referrals to friends). A separate document, the **Data Dictionary**, will be shared with you, containing a detailed description of each attribute in the dataset.

- Conduct descriptive analytics to identify the factors associated with customers' spending on sports products. **Descriptive analytics encompasses the use of statistical analysis and visualization techniques. For instance, employing a box plot and a bar chart are considered as two distinct techniques.**
- **Offer recommendations to the leadership team on enhancing customers' spending and user engagement on applications,** based on the results obtained from descriptive analytics.

Guidance on Data Analysis

Note: The dataset and the data dictionary will be provided to you separately.

There is not a single correct answer to the assignment. The dataset includes many attributes for you to explore, and some attributes are likely to be more useful than others. Therefore, it is important that you systematically explore different variables in the dataset to facilitate your analysis.

- Consider potential key factors associated with **increasing sales and app engagement by** relating them to real-world scenarios. Justify your selection of variables by **referring to industry examples and supporting arguments.**
- While creating multiple graphs for your assignment, ensure that you only include figures that **support your main findings.** These graphs should highlight key features of the associations you are reporting.
- Your recommendations to the leadership team at ASAL should be well supported by your visualizations and/or statistical summaries.
- Explicitly state any **key assumptions that** impact your data analysis and any caveats regarding your recommendations.

Requirements:

1. Problem Exploration (10%)
 - Explore and understand the business problem of retail sales within the **Australian context.**
 - Clearly state the purpose of the analytics tasks.
2. Data Analysis (50%)
 - Justify the selection of techniques and variables, with a recommendation of using more than 3 variables for analysis.
 - Apply appropriate descriptive analytics techniques, **such as summary statistics and data visualization. Avoid conducting predictive or prescriptive analytics.**
 - Utilize visualization graphs, such as **histograms, bar charts, scatter plots, and box plots,** to explore associations between variables.
 - Interpret the results obtained from the analytics.

3. Recommendations (20%)

- Provide recommendations based on the analytics results.
- Support the recommendations using **state-of-the-art industry practices and supporting arguments.**
- Incorporate supplementary readings related to the assessment and **conduct self-research to develop informed recommendations.**

4. Communication (10%)

- Demonstrate proficiency in reading and writing in English.
- Use language, figures, and/or tables to convey qualitative and quantitative information effectively and accurately.
- Attach **the R programming code (not a screenshot)** to the Appendix of the report.

5. Organization and structure of the report (10%)

- Develop a logical structure to organize the sections of the report.
- Use academic **referencing in the Harvard style**. Refer to the UNSW guideline: <https://www.student.unsw.edu.au/harvard-referencing>
- An example of structuring and developing the report is provided in Appendix A.

Submission Instructions

- A written report with all relevant codes in an appendix.
- A cover sheet with signature.
- Word limit is **750 words with 10% leeway.**

Please note:

- the codes do not count toward the word limit. **A 10% penalty applies to missing a signed cover sheet in the submission.**
- 5% penalty is applied for exceeding the word limit.

Late Submission Penalties

- Late submission will result in a penalty of 5% per day or part thereof (including weekends) from the original due date and time. Assignments will not be accepted after 5 days (120 hours) past the original deadline unless special consideration has been approved. A submission will be considered late if the requested format, whether hard copy or electronic copy, has not been submitted on time, or if the wrong assignment has been submitted.
- Extensions will not be granted unless there are valid reasons such as serious illness, misadventure, or bereavement, which must be supported by documentary evidence. Requests for extensions must be sent via email to the

Course Coordinator and be accompanied by the appropriate documentation no later than 24 hours before the assignment's due date. In cases where this is not feasible, students must apply for Special Consideration.

- The Course Coordinator is the only person authorized to approve extension requests. If a request for an extension is made, the Course Coordinator will communicate the decision via email to the student. It is important to note that a request for an extension does not guarantee its approval.

Smarthinking English Support

“... an online writing support platform officially sanctioned by UNSW. Students can submit drafts of their writing to a Smarthinking tutor or connect to a Smarthinking tutor in a real-time session and receive comprehensive feedback on a variety of writing areas”. <https://www.student.unsw.edu.au/smarthinking>

Smarthinking is available on the COMM1190 Moodle Site.

Using the service, you can:

- Submit your drafts to a Smarthinking tutor for **comprehensive feedback on your writing typically within 24 hours**; or
- Connect to a Smarthinking tutor in a **live one-on-one session about writing**.
- Receive comments on a **variety of writing areas** including clarity of your ideas, grammar, organization, etc.
- Use up to **2 hours** on Smarthinking reviews

Marking Rubric for Individual Assessment

		Weight %	Criteria	Fail (0% - 49%)	Pass (50% - 65%)	Credit (65%-74%)	Distinction (75%-84%)	High Distinction (75% - 100%)
ANALYSIS (80%)	10		Problem Exploration	<ul style="list-style-type: none"> Does not show any engagement with sources external to the assignment document to augment understanding of the business problem and context. 	<ul style="list-style-type: none"> Identifies a few sources external to the assignment document to augment understanding of the business problem and context; sources are not highly relevant and/or credible; writing lacks synthesis 	<ul style="list-style-type: none"> Identifies relevant sources external to the assignment document to augment understanding of the business problem and context; sources are relevant and credible; synthesizes information without any inferences. 	<ul style="list-style-type: none"> Identifies relevant sources external to the assignment document to augment understanding of the business problem and context; sources are relevant and credible; synthesizes information and draws relevant inferences. 	<ul style="list-style-type: none"> Identifies relevant sources external to the assignment document to augment understanding of the business problem and context; sources are highly relevant and from credible academic sources; writing synthesizes information and draws highly original inferences.
	50		Data Analysis	<ul style="list-style-type: none"> No relevant descriptive analytical technique was identified. No specific variable was identified. No logic between business issues, analytical techniques, and variable selection. No statistics summary or 	<ul style="list-style-type: none"> Identifies 1 descriptive analytical technique to be used for solving the problem. Identifies variables for each technique to be deployed. Attempts to present a logic between business issues, analytical techniques, and variable selection, 	<ul style="list-style-type: none"> Identifies and explains 2 descriptive analytical techniques to be used for solving the problem. Identifies and explains variables for each technique to be deployed. Attempts to present a logic between business issues, analytical 	<ul style="list-style-type: none"> Identifies, explains, and justifies 3 descriptive analytical techniques to be used for solving the problem. Identifies, explains, and justifies variables for each technique to be deployed. Presents a reasonable logic between business 	<ul style="list-style-type: none"> Identifies, explains, and justifies 3 descriptive analytical techniques to be used for solving the problem with clarity. Identifies, explains, and justifies variables for each technique to be deployed. The justifications are sound and convincing.

	Weight %	Criteria	Fail (0% - 49%)	Pass (50% - 65%)	Credit (65%-74%)	Distinction (75%-84%)	High Distinction (75% - 100%)
			<p>visualization is presented.</p> <ul style="list-style-type: none"> ■ The results are mostly incorrectly interpreted. ■ No R codes are included. 	<p>but the logic is not coherent or clear.</p> <ul style="list-style-type: none"> ■ Attempts to analyze data but conduct inadequate data analysis in some aspects. ■ The results are somewhat correctly examined and interpreted. ■ R codes are included but extensive errors are identified. 	<p>techniques, and variable selection.</p> <ul style="list-style-type: none"> ■ Analyzes data but explanations of analysis results are insufficient. ■ The results are mostly correctly examined and interpreted. ■ R codes are included but some errors are identified. 	<p>issues, analytical techniques, and variable selection.</p> <ul style="list-style-type: none"> ■ Analyzes data adequately with sufficient explanations of the issues identified, but the solutions to solving the issues identified are insufficient. ■ The results of each model are mostly correctly interpreted and examined supported by academic references. Results interpretation is relevant and meaningful in the case context. ■ R codes attached are mostly correct. 	<ul style="list-style-type: none"> ■ Explicitly presents a coherent and clear logic between business issues, analytical techniques, and variable selection. The logic is coherent and clear. ■ Analyzes data adequately with sufficient explanations of the issues identified, and with adequate solutions to the issues identified using statistics and visualization. ■ The results of each model performance and findings are correctly interpreted and critically examined supported by academic references. Results interpretation is relevant and meaningful in the case context. ■ R codes attached are thoroughly correct.

Weight %		Criteria	Fail (0% - 49%)	Pass (50% - 65%)	Credit (65%-74%)	Distinction (75%-84%)	High Distinction (75% - 100%)
20		Recommendation	<ul style="list-style-type: none"> Inadequate or no recommendations of the analysis/evidence are provided. 	<ul style="list-style-type: none"> Recommendations are somewhat inconsistently tied to some of the issues discussed and inconsistently linked back to variables analyzed. 	<ul style="list-style-type: none"> Recommendations are consistently tied to each issue discussed and linked back to variables analyzed. 	<ul style="list-style-type: none"> Recommendations are logically and consistently tied to each issue discussed and linked back to variables analyzed. 	<ul style="list-style-type: none"> Recommendations are logically and consistently tied to each issue discussed, linked back to variables analyzed, and developed with critical thinking.
COMMUNICATION (20%)	10	Communication	<ul style="list-style-type: none"> Your writing lacks a professional tone and contains numerous spelling and grammatical errors. The structure of your essay does not demonstrate a logical flow between each section, affecting the overall coherence of your written expression. 	<ul style="list-style-type: none"> Although some attempts have been made to use a professional tone and presentation in your writing, there are still some lingering spelling and grammatical errors that need attention. It appears that you have made an effort to establish logic and flow between each section of the essay. However, there is room for improvement in terms of ensuring a seamless transition and coherence throughout. 	<ul style="list-style-type: none"> Your writing demonstrates a mostly professional tone and presentation, although there are occasional spelling and/or grammatical errors that should be addressed. Overall, your written expression adequately indicates the logic and flow between each section of the essay, but there is room for further improvement to enhance the coherence of your ideas. 	<ul style="list-style-type: none"> Your writing is professional in tone and presentation with a few very minor spellings and/or grammatical errors. Your written expression provides a strong indication of the logic/flow between each section of the essay. 	<ul style="list-style-type: none"> Your writing maintains a professional tone and is presented exceptionally well, without any noticeable spelling or grammatical errors. Your written expression skillfully demonstrates a strong and coherent indication of the logic and flow between each section of the essay. This has enabled your key arguments to develop fully and effectively.
	10	Organisation and structure of the report	<ul style="list-style-type: none"> Poor or unclear 	<ul style="list-style-type: none"> Attempt to a good structure 	<ul style="list-style-type: none"> Good structure with organized headings. 	<ul style="list-style-type: none"> Good structure with organized 	<ul style="list-style-type: none"> Good structure with organized headings

			<p>structure.</p> <ul style="list-style-type: none"> ■ Your sources have not been referenced and/or there are excessive errors in referencing in the essay. 	<p>but lack coherent flow between sections.</p> <ul style="list-style-type: none"> ■ Some sources are referenced throughout the essay, but there are errors in your 	<ul style="list-style-type: none"> ■ Most sources are referenced throughout the essay, with only minor errors in referencing. 	<p>headings and coherent follow between sections.</p> <ul style="list-style-type: none"> ■ All sources are referenced throughout the essay with only 	<p>and coherent follow between sections.</p> <ul style="list-style-type: none"> ■ All sources are referenced throughout the essay and the sources are used very well, with no
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	Weight %	Criteria	Fail (0% - 49%)	Pass (50% - 65%)	Credit (65%-74%)	Distinction (75%-84%)	High Distinction (75% - 100%)
			■ The word limit has not been adhered to.	referencing of sources.		minor errors in referencing.	significant errors in referencing.

Appendix A. An Example of Report Template

Content page

Include:

- Page numbers from this page onwards (Insert → Page Number)
- A header from this page onwards, including your ZID and course code (Insert → Header)
- All key sections and sub-sections of your report listed in the contents page

If you are unsure how to format a report contents page, select “References” in the menu above, then “Table of Contents”. Examples:

The screenshot shows the 'Table of Contents' task pane in Microsoft Word. The top ribbon includes 'Table of Contents', 'Add Text', 'Update Table', 'Insert Footnote', 'Insert Endnote', 'Next Footnote', and 'Show Notes'. The main area displays three examples of table of contents:

Built-In

Automatic Table 1

Contents

Heading 1	1
Heading 2	1
Heading 3	1

Automatic Table 2

Table of Contents

Heading 1	1
Heading 2	1
Heading 3	1

Manual Table

Table of Contents

Type chapter title (level 1)	1
Type chapter title (level 2)	2
Type chapter title (level 3)	3
Type chapter title (level 1)	4

At the bottom, there are four links:

- [More Tables of Contents from Office.com](#)
- [Custom Table of Contents...](#)
- [Remove Table of Contents](#)
- [Save Selection to Table of Contents Gallery...](#)

Key sections to include in your report

1. Introduction

- ✓ Have you provided the **purpose** of your report?
- ✓ Have you discussed the **business context** adequately in your report?
- ✓ Have you given a brief **outline** of the contents of your report?

2. Summary Statistics

- ✓ Have you included relevant data in the form that best communicates it, e.g. tables, figures, etc?
- ✓ Have you divided this data into clear sections or themes for readability?
- ✓ Have you clearly linked this data to the subject matter and how it is relevant to the question and problem at hand?
- ✓ Have you referenced any literature or recent events that you researched, if it provides useful insights into or justification for the problem analysis?

3. Visualization Analysis

- ✓ Have you identified and explained the variables based on the data?
- ✓ Have you included relevant graphs which are appropriate for the type of data you're presenting?
- ✓ Have you used the data to clearly justify why the variables and visualization techniques are related to the problem, concluding the variables that are the most relevant?

4. Recommendations

- ✓ Have you made at least one clear, actionable recommendation?
- ✓ Is/are your recommendation/s based on the conclusions/data-supported variables above?

5. Reference List

- ✓ Are your references in alphabetical order?
- ✓ Do your referencing follow Harvard style as required?

6. Appendix

- ✓ Have you included your R code in the Appendix?
- ✓ Have you included any other supporting tables or figures in the Appendix, as relevant?