

7117IBA Applied Case Study

Due: 29th April 2022

Weight: 20%

SAS stands for the Statistical Analysis System, a software system for data analysis and report writing. SAS is a group of computer programs that work together to store data values and retrieve them, modify data, compute simple and complex statistical analyses, and create reports.

REQUIREMENTS

You are a member of a business intelligence team supporting management of ABC Retail Company. The company uses a computer-based sales system. You are provided with the following data table:

TRANSACTIONS	Sample Table of sales transactions.	(Refer to Appendix 1)
STATE_LOOKUP	States names lookup Table.	(Refer to Appendix 1)

The TRANSACTIONS table contains a sample of sales that took place over a period of various weeks, after all transactions have been posted. The transaction information includes not only date and time, but also demographic, geographic and product information.

*You have been asked to use **SAS Enterprise Guide programs** to analyse the TRANSACTIONS, and provide information and insights to management, for store management, potential market segmentation or new promotional campaigns. You are to produce a management report with sections dealing with each of the issues on the next page. Your report should cover each issue and include (where appropriate) a summary of findings.*

NOTE: Due to the cancellation of Labs you do not need to do the above (in Italics). You have been provided with the output obtained from above exercise and now only require to complete the Descriptive Analysis and Creative Insights sections. These can all be submitted in a word document.

For each issue, comment briefly on what you found, its significance, and its implications for the company. You should support your findings with appropriately labelled and totalled reports generated with SAS (in html format). See Appendix 2 for information on generating reports.

Report headers should identify the company, the time period covered, your name and the title of the report. All SAS reports should be **sorted** in a manner, which focuses attention on the high value items. Submit these SAS reports along with your management report. Also, you are required to submit your SAS programs used to generate these reports.

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1. Descriptive Analysis

Q1. What's the total amount of money spent per weekend on each shopping week?

Q2. How much money was spent by each age group?

Q3. What is the total quantity sold and total amount of sales of each product in each state? (make sure to include the **State Name**. hint: join tables)

Q4. Which 20 products have the highest sales in value where more than 1 item was sold?

Q5. How many unique customers does region W01 have?

2. Creative Insights

Q6. How would you use the results of these reports to enhance this retailer's business? (suggest 5 strategies).

APPENDIX 1

Transactions (Table) Record Layout

Column name	Description	Type	Sample values
shop_week	Identifies the week of the basket	Char	Format is YYYYWW where the first 4 characters identify the fiscal year and the other two characters identify the specific week within the year (e.g. 200735). Being the fiscal year, the first week doesn't start in January.
shop_date	Date when shopping has been made. Date is specified in the yyyyymmdd format	Char	20060413, 20060412
shop_weekday	Identifies the day of the week	Num	1=Sunday, 2=Monday, ..., 7=Saturday
shop_hour	Hour slot of the shopping	Num	0=00:00-00:59, 1=01:00-01:59, ...23=23:00-23:59
Quantity	Number of items of the same product bought in this basket	Num	Integer number
spend	Spend associated to the items bought	Num	Number with two decimal digits
prod_code	Product Code	Char	PRD0900001, PRD0900003
prod_code_10	Product Hierarchy Level 10 Code	Char	CL00072, CL00144
prod_code_20	Product Hierarchy Level 20 Code	Char	DEP00021, DEP00051
prod_code_30	Product Hierarchy Level 30 Code	Char	G00007, G00015
prod_code_40	Product Hierarchy Level 40 Code	Char	D00002, D00003
cust_code	Customer Code	Char	CUST0000001624, CUST0000001912
cust_price_sensitivity	Customer's Price Sensitivity	Char	LA=Less Affluent, MM=Mid Market, UM=Up Market, XX=unclassified
cust_lifestage	Customer's Lifestage	Char	YA=Young Adults, OA=Older Adults, YF=Young Families, OF=Older Families, PE=Pensioners, OT=Other, XX=unclassified
basket_id	Basket ID. All items in a basket share the same basket_id value.	Num	994100100000020, 994100100000344
basket_size	Basket size	Char	L=Large, M=Medium, S=Small
basket_price_sensitivity	Basket price sensitivity	Char	LA=Less Affluent, MM=Mid Market, UM=Up Market, XX=unclassified
basket_type	Basket type	Char	Small Shop, Top Up, Full Shop, XX
basket_dominant_mission	Shopping dominant mission	Char	Fresh, Grocery, Mixed, Non Food, XX
store_code	Store Code	Char	STORE00001, STORE00002
store_format	Format of the Store	Char	LS, MS, SS, XLS
store_region	Region the store belongs to	Char	E02, W01, E01, N03
store_state	Identifies store location by state code	Char	NSW, VIC, NT, QLD ...

State_Lookup (Table)***Record Layout***

Column name	Description	Type	Sample values
State_code	Identifies the state code	Char	NSW, VIC, NT, QLD ... etc.
state_name	Identifies the state name	Char	New South Wales, Victoria ... etc.

APPENDIX 2

Assignment Submission Requirements

This assignment requires students to produce a management report addressing specified issues. This management report should be produced as an MS Word document. SAS reports should accompany this management report. These reports should be .htm files with filenames (reference numbers, e.g. Q1.htm) corresponding to each issue. The management report, .htm files and Base SAS programs should be submitted **zipped together as one file**, along with the assignment cover sheet as instructed.

The SAS reports should be output in each case to an .htm file (use the reference number as the filename, e.g. Q1.htm). When using Base SAS, you use the ODS statement to send your output to a designated file in a 'html' format. See Program EX2AA.SAS (Workshop 3).

Use a consistent layout for your SAS reports:

Header:	ABC Retail Company Transactions: Sample ## Sales Transactions Analysis Report Q1: Total Product Sales per Region
Footer:	Course Code, Student Number, your name

Additional Notes

Students are expected to submit a **good quality management report**, suitable for submission to the Director. They should address each issue, referring to their findings (e.g. **number of items sold, total number of customers, significance of findings**) and the associated SAS reports.

Reports should be **consistently labelled**, identifying the Company, period covered, student name(s) and report title. Columns should be **formatted**. Reports should be **sorted** high value items where appropriate.

Students should **comment on the significance** of their findings, **individually and in combination**.

The management report should start with an **Introduction** explaining the scope of the project, have a section for each issue, and end with a **Summary** of findings and an overall **Conclusion**.

7117IBA Applied Case Study Criteria Sheet

Student Name:Student No.:

(Please write in block letters here. This sheet will be the second page of your assignment following the Assignment Cover Sheet.)

Criteria	Unsatisfactory	Low Pass – Pass	Above Average	Excellent	Marks
Analysis and Judgment	Provided information from the case. No logical argument was presented leading to a satisfactory conclusion.	Identified relevant information from the case. There was some evidence of logical argument leading to a conclusion.	Identified and analysed relevant information from the case. There was good evidence of logical argument leading to and supporting a conclusion.	Relevant information from the case was identified and analysed comprehensively. Strong evidence was shown of a logical argument that led to and supported a conclusion.	/6
Communication	Failed to submit a management report. Wrote in an unclear and unstructured manner with unsatisfactory spelling, punctuation, and grammar. Did not acknowledge sources.	Submitted a management report and wrote in a clear and structured manner with satisfactory spelling, punctuation, and grammar. Acknowledged sources.	Submitted a management report with Introduction, appropriate sections, and overall summary and conclusions. Wrote in a clear, logical and structured manner with good spelling, punctuation, grammar and referencing.	Submitted a management report with Introduction, appropriate sections, and overall summary and conclusions. Wrote in a clear, logical and structured manner with correct spelling, punctuation, grammar and referencing.	/4
Technology Application	Demonstrated little competence in analysing output of SAS software to produce professional quality, consistently presented and correct descriptions to meet project objectives.	Demonstrated some competence in analysing output of SAS software to produce professional quality, consistently presented and correct descriptions to meet project objectives.	Demonstrated good competence in analysing output of SAS software to produce professional quality, consistently presented and correct descriptions to meet project objectives.	Demonstrated a high level of competence in analysing output of SAS software to produce professional quality, consistently presented and correct descriptions to meet project objectives.	/10
Total Marks					/20