Case study

Background

Cunningham Holdings Limited is a diversified family owned business. For more information about the company see the company profile (link to company profile). The Company has embarked on a radical re-think in relation to how they do business aligned with their new Corporate vision " Creating Sustainable Products and Services for Globally Connected Communities" The vision identifies key United Nations Sustainable Development goals into all planning activities for business innovation. The focus in creating sustainable products and services is underpinned by developing initiatives that:

1. Have a global Business perspective
2. Leverage the power of data and insights
3. Build leadership and management skills

The CHL Hospitality subsidiary manages 300 hospitality venues located across Australia. The client base for CHL Hospitality varies from business travellers to families and the hospitailty venues provide varied accommodation, catering and leisure activities ranging from luxury to economy options. In Australia, CHL Hospitality manages four types of accommodation and classifies them as: Resort, Cottage, Classic and Comfort. The Resort and Cottage are upmarket brands. The Classic and Comfort are for family and budget conscious travellers. The Comfort was formerly a local budget motel chain that is a recent acquisition for CHL Hospitality and only has accommodation availabilities in New South Wales and Victoria. The CHL Hospitality pricing policy, allows each accommodation type to set their own price rate as long as it falls within the Subsidiary pricing guidelines. Hence, the rates within the accommodation brands may differs.

The focus in the coming months for Oscar Cunningham as the CEO of CHL Hospitality is to develop information and understanding to develop the following:

CHL Hospitality - Sustainable products and Services	Questions/focus	Initiatives for investigation
Have a global Business perspective	What do inter and intra country clients want?	• "Family friendly" holidays • "Detox" Tourism • Consolidate/diversify current accommodations types and extend to other Australian states/International
Leverage the power of data and insights	Develop enhanced marketing strategies and intelligence Align data analytics to inform business innovation	• Use marketing graduates to research and identify opportunities • Use a business analyst to review relevant aspects of accommodation to inform new "family friendly strategies"

Build leadership and management skills	Mentoring and coaching support for staff	• Provide information and coordinate virtual workshops for accommodation managers to collaborate and identify innovation based on Business analyst reporting

Oscar is a family man and father of two children and he has a particular passion for ensuring work life balance and ensuring he spends quality time with his family both at home and on vacation. He understands that many factors can influence the choices people make when selecting vacation locations and accommodation. Before introducing the '"Family Friendly" holiday promotion, Oscar wants an analysis of the current pricing and competition situation among the Resort, Cottage and Classic accommodation types. In particular Oscar is concerned that the introduction of the Comfort type accommodation has increased internal competition among the accommodation options and is not a sustainable service moving into the future.

Mr Oscar has requested the accommodation brands management to report their average weekly rate in three states over the last three month. It also required the management of Resort, Cottage, and Classic brands to indicate where Comfort motels were present within the 2km vicinity of the accommodation. The data collected are as follows.

Rate   Average weekly rate of the accommodation.
Brand   1 – Resort, 2 – Cottage and,3 – Classic
State   1 – New South Wales (NSW), 2 – Queensland (QLD) and, 3 – Victoria (VIC)
Location   1 – Metropolitan cities and, 2 – Regional Cities
Comfort in vicinity   1 – Yes, and, 2 – No. This is only relevant to New South Wales and Victoria

Note:
That pricing for Comfort brand was not collected. Only the indication whether it is within the vicinity of Resort, Cottage, and Classic was recorded by the managers.

You are the senior Business Analyst in the CHL Hospitality and Mr Oscar assign you the task to analyse the pricing and competition situations of the four brands and report to him your findings.

Mr Oscar has requested you to analyse the data collected and present a report on summarising the findings of your analysis for the following five issues. The expansion of the 'Feel Welcome' package to other states in Australia is very much depend on the outcome of your analyst and insights. The data are available in the **CHL Accommodation Data.xlsx**

Issue 1
Mr Oscar wants to have a clear idea about the current pricing among the accommodation brands, by state and by location.

Issue 2
Since the accommodations are allow to set their own rates and cater for different segment of market, Mr Oscar believes that is a price differentiation between the Resort, Cottage, and Classic brands (i.e., whether the price between the brands are different).

Issue 3
The accommodations surveyed are located in NSW, QLD, and VIC. Due to the size of market, weather preference, and types of attractions available among the states. Mr Oscar want to know whether there is a price difference across the three states among the accommodation brands (i.e., whether the state factor do influence the pricing of Resort, Cottage and Classic brand – Two factors State and Brand).

Issue 4
Similarly, the accommodations are located in various suburbs and locations among the states. Some at metropolitan cities and some at regional cities. Mr Oscar believes price difference exist at different locations among the accommodation brands (i.e., whether the location factor do influence the pricing of Resort, Cottage and Classic brand – Two factors Location and Brand).

Issue 5

Finally, Mr Oscar would like to know whether the introduction of the Comfort brand has increased internal competition among the accommodation brands (i.e., If competition exist, the pricing of a brand say Resort with a Comfort nearby is lower than a similar Resort with no Comfort nearby).

Requirement

Analyse the data collected and present an 800 word report summarising you're the findings of your analysis to Mr Oscar. In preparing the report, you need to perform the followings.

1. Action Plan (50%)

In the action plan you are required to describe the process how do you response to Mr Oscar's five issues one by one.

Example Action Plan for Issue 1.
1. Construct a Pivot Table from the data given (CHL Accommodation Data.xlsx)
2. Restructure the Pivot Table fields to present the required information.

Example of presentations
   a. Summary of average Price by Brand
   b. Summary of average price by State
   c. Summary of average price Brand by State
   d. Summary of average price by Location
   e. Summary of average price by Brand by Location

Example of documentation and findings (figures from your Excel spreadsheet)

By Brand		
Row Labels ▼	Average of Price	Count of Brand
1	200.2704167	48
2	202.65625	48
3	201.4627083	48
Grand Total	201.463125	144

Summary By Brand (Average Price)		
Brand	No of Hotel	Average Price
Resort	48	200
Cottage	48	203
Classic	48	201

In total 144 accommodation samples were surveyed in the three states. Forty-eight (48) of each type were included in the sample. The average price for Resort was $200, Cottage was $203, and Classic was $201. Visual examination shows no price variation among the types. But, this is still to be confirmed using statistical testing processes.

For Issue 2 to 5 you need to describe your process involving hypothesis-testing Procedure.

i.   Identifying the population parameter of interest and formulating the hypothesis to test
ii. Select a level of significance (α), which defines the risk of drawing an incorrect conclusion when the assumed hypothesis is actually true
iii. Determine the decision rule on which to base a conclusion
iv. Collect data and calculate the test statistics. Here, you need to mention what type of test you are performing.
v.   Apply the decision rule to the test statistics and drawing conclusion. You also need to make a statement whether you agree with the view of the Mr Oscar.

Example Action Plan for Issue 2.
1. Sort the data by BRAND. Copy and reorganise the data into three columns by brand name.

Resort	Cottage	Classic
200.20	201.75	196.11
198.21	201.08	196.22
199.21	199.18	196.86
198.98	201.83	198.49
199.13	202.82	200.11
199.43	204.05	205.52
.	.	.
.	.	.
.	.	.
.	.	.

2. Hypothesis testing procedure
i. Let u1 = average weekly rate for Resort brand
   u2 = average weekly rate for Cottage brand
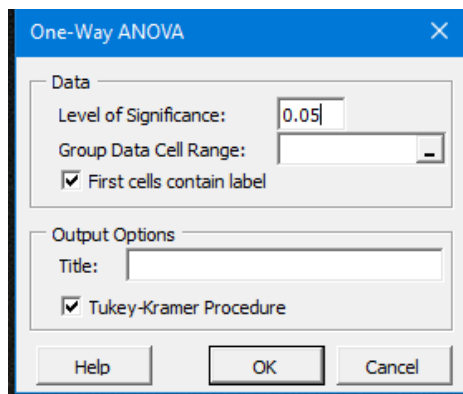   u3 = average weekly rate for Classic brand

   H0: u1 = u2 = u3
   H1: at least one u is different

ii. Level of significance (α) = 0.05
iii. If p-value < α, Reject H0.
iv. Using PHStat, run One-Way ANOVA with Turkey Kramer procedure

Note: image include for illustration only.
v. Apply the decision rule to the test statistics and drawing conclusion.
   Describe you result and draw your conclusion here. You also need to make a statement whether you agree with the view of the Mr Oscar.

In conducting the test for issues 2 to 5, you need to explain whether you use One-Factor ANOVA (with Turkey Kramer) or Two-Factor ANOVA. For Question 5, you may need to perform more than one tests in order to conclude whether internal competition does exist among three brands (Resort, Cottage, and Classic) when Comfort were nearby. For example, if internal competition does exist, the average price of a brand (for example, Cottage), the average price of a Cottage will be lower where a Comfort was nearby as compare to a price of Cottage with NO Comfort nearby. Depends on how you structure your data and frame your hypothesis, state clearly whether you are conducting upper-tailed or lower-tailed test.

2. **Spreadsheet Analysis (30%)**
The spreadsheets must contain all the analytics and tests you have performed. Replicate the original data file given into five new spreadsheet files. Name the spreadsheets as Issues 1 to 5. Keep the original data file as backup. Perform you analysis for each issue using the replicate spreadsheet file. In preparing your analysis for each issue, you are required to demonstrate how you prepare and organise the data for your analysis (see Action Plan).

3. **Communication (20%)**

In this report, you must use your findings to address **ALL** the issues raised by Mr Oscar. The report length limit is 800 words.