



# **ETC513 Assignment 3: Comparison of Energy and Pollution by Country**

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## Introduction

- Data Description:

This data set is [Practical driving examination results for customers](#) which is provided by local government authority (LGA) of Queensland. It records the license class, booking type, examination results and driver age group during 2005 to 2019.

- Research aims:

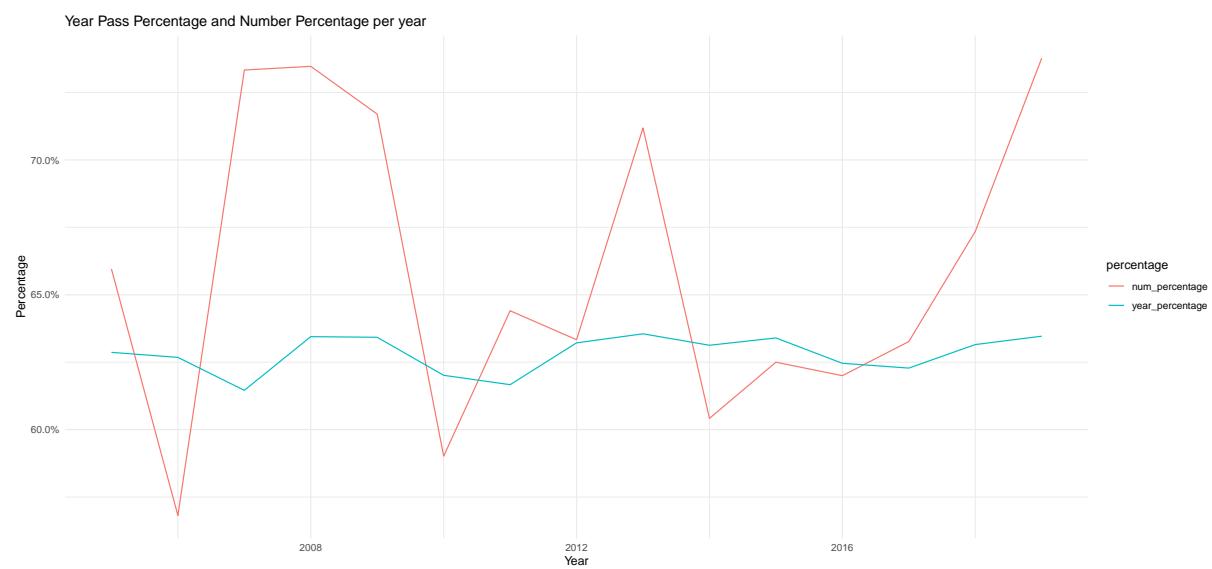
We divided into three parts, the first part focuses on the annual pass rate of different local government authority.

The second part mainly aims to compare the age group with different license.

The third part calculates the correlation between the examination results and booking type.

## Step 1

The first part focuses on the annual pass rate of different local government authority.



**Figure 1:** Year Pass Percentage(*year\_percentage*) and Percentage of Local Government Authority annual passing rates exceeding the total annual passing rate(*num\_percentage*)

In the figure 1, as for the annual pass rate, it does not fluctuate greatly, and basically remained at 62.5% but the percentage of the number exceeding the annual pass rate fluctuates greatly, which

**Table 1:** Number of time getting the highest pass rate per year

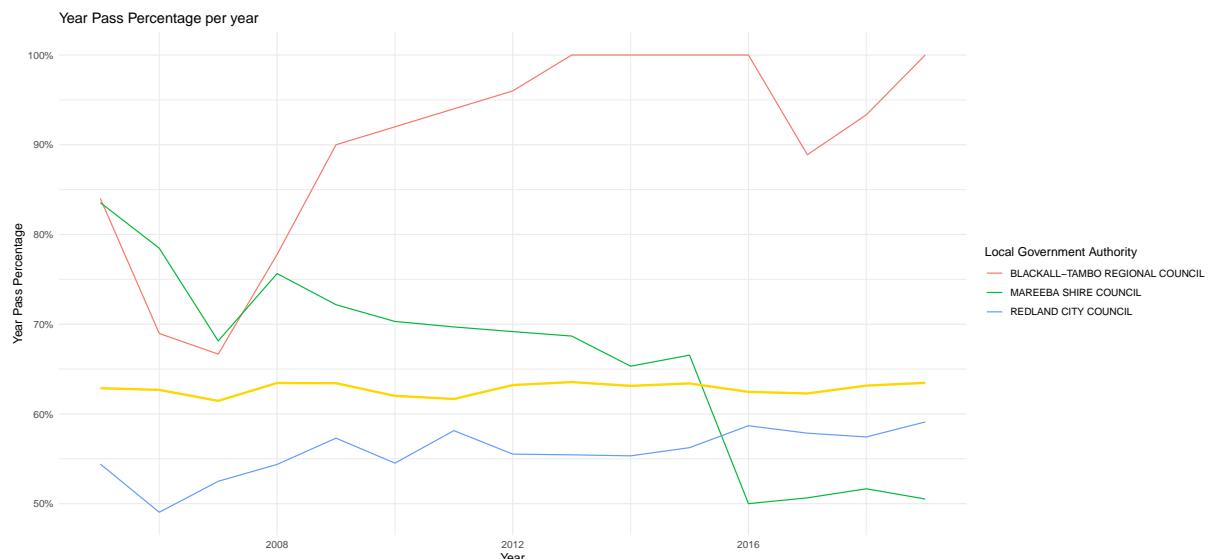
Local Government Authority	count
BLACKALL-TAMBO REGIONAL COUNCIL	5
BALONNE SHIRE COUNCIL	4
HOPE VALE ABORIGINAL SHIRE COUNCIL	4
MOBILE SERVICES	4
BARCALDINE REGIONAL COUNCIL	3
BURKE SHIRE COUNCIL	3

**Table 2:** Number of time getting the lowest pass rate per year

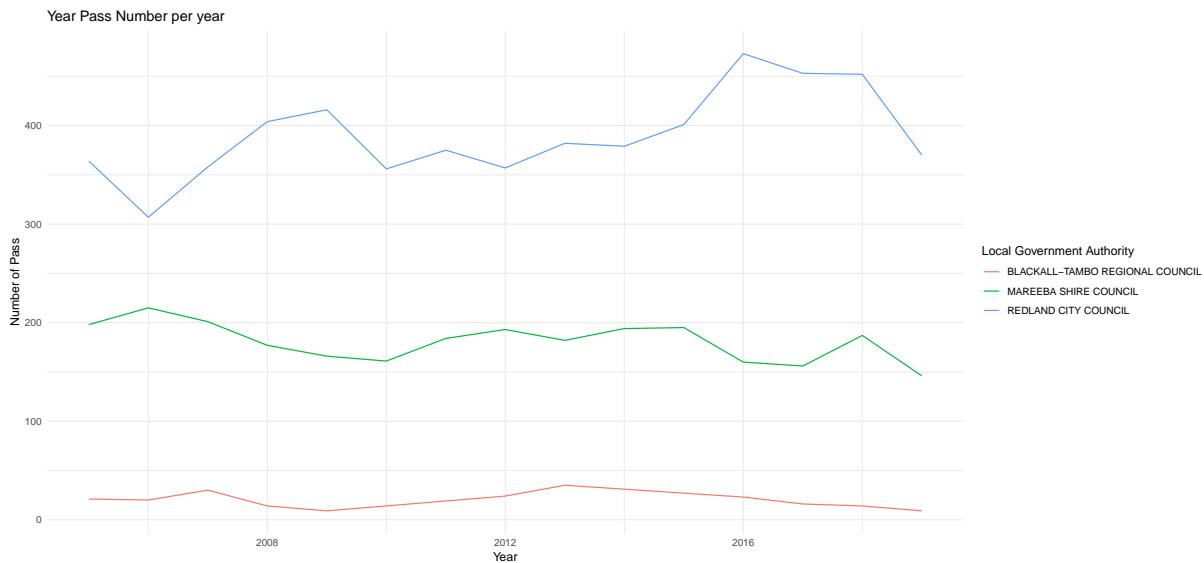
Local Government Authority	count
MAREEBA SHIRE COUNCIL	2
NAPRANUM ABORIGINAL SHIRE COUNCIL	2
REDLAND CITY COUNCIL	2
BURDEKIN SHIRE COUNCIL	1
HOPE VALE ABORIGINAL SHIRE COUNCIL	1
KOWANYAMA ABORIGINAL SHIRE CONUNCIL	1

may be due to missing data in some regions, however, from the data point of view, it has been in an upward phase in recent years.

In the table 2, BLACKALL-TAMBO REGIONAL COUNCIL has the most number of first (5 times), MAREEBA SHIRE COUNCIL, NAPRANUM ABORIGINAL SHIRE COUNCIL, REDLAND CITY COUNCIL have won the last 2 times.

**Figure 2:** Year Pass Percentage in BLACKALL-TAMBO REGIONAL COUNCIL, BLACKALL-TAMBO REGIONAL COUNCIL, and REDLAND CITY COUNCIL

According to the figure 2, the annual pass rate of BLACKALL-TAMBO REGIONAL COUNCIL has been on the rise after 2007, even reaching 100%, while the annual pass rate of MAREEBA SHIRE COUNCIL is in a downward state, and the annual pass rate of REDLAND CITY COUNCIL basically fluctuates at 55%. Especially, MAREEBA SHIRE COUNCIL and REDLAND CITY COUNCIL have been lower than the annual pass rate since 2015, which the gold line is year pass rate.



**Figure 3:** Year Pass Number in BLACKALL-TAMBO REGIONAL COUNCIL, MAREEBA SHIRE COUNCIL, and REDLAND CITY COUNCIL

In the figure 3, the number of pass for three government authorities basically has little fluctuation. Interestingly, the ranking of the number of passes and the ranking of the pass rate are completely opposite.

Therefore, the annual pass rate has not changed much, the percentage of the number exceeding the annual pass rate fluctuates greatly. Areas with sparsely populated areas may have fewer people participating, resulting in a higher overall pass rate than areas with densely populated areas.

## Step 2

## Step 3