**Analysis of Sales Data within Queensland, Tasmania, Northern Territory, Victoria, Australian Capital Territory and New South Wales**

First of all, let us look at the Sales Data from the entire period 2018-2020 for each State for each product as shown in the following Bar Chart and Table.

Chart, bar chart

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Table

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Let us understand the products that are being analysed.

Let’s begin with the Viper Ear Muffs, which I understand are used to minimise the exposure to very loud noise. In Australia, this is particularly relevant in the Industrial, Construction and Mining Sectors. Mining in particular takes place in all the States in Australia, particularly for Black and Brown Coal, Gold, Iron Ore, Lead, Nickel, Bauxite, Zircon and Diamonds.

As we can see from the data, the state of Queensland has the highest sales figures for all products across the 2018-2020 time frame. Out of all the 6 states, Queensland has the third largest population and has 615 cities. New South Wales followed by Victoria have the highest populations and have approximately 70 and 53 cities respectively. As far as mining is concerned in Queensland, it contributes significantly to base metal production and leads the way in Black Coal, Lead and Zinc production. Queensland is Australia’s leading source of Bauxite, which is used in the production of Aluminium. In addition to this, demand and price for Aluminium has increased, which is good new for Australian Mining as it also exports the metal abroad. Overall, this contributes to the increased Sales in Queensland for this product.

As Queensland has the most number of cities of all those in the data, it is logical to say that the reason why Viper Ear Muffs are most popular here is because it is more likely that more construction occurs here. The land area in Queensland in Sq Km is the second highest in the country behind Western Australia, who is not in this data set. Therefore, more land can possibly equate to more construction and more purchase of this product.

The next product we are analysing is the Spill Response Kit, which is a kit to attend to a spillage, whether it be an Oil, Fuel or Chemical spill. In Australia, it is required by Law, that it is your responsibility to ensure, that by your actions you do not cause a spillage that can affect your employees or the environment. This I anticipate to be the reason behind the sales of this product, whereby in Queensland the highest sales figure occurs. With 615 cities in this state, there are potentially more businesses and therefore a higher demand for this product.

Following on from that, the next product is the Bio Waste Kit, which I presume is to clean up Biohazardous waste. Usually a Biohazardous Spill is comprised of bodily fluids from animals or humans.

A Hook Tie Down System is a strap with a hook that secures loads, which I think is used in Construction and Mining. It’s use compliments the Viper Earmuffs and the Spillage Kits.

A Mineral Absorbent Solution is used to mitigate damage in the unfortunate event of a chemical, oil or acid spill. Again this type of product can be used together with the Spillage Kits and the other products.

Storage Cabinets are used in this context to safely store chemicals and can help to prevent accidents and reduce harm at mine sites.

If you look at the sales figures as a whole for each state you notice that the sales figures for Queensland are more or less double for each product compared to the sales figures from all the other states. In addition to this, the sales figures for all products across all states apart from Queensland are visibly on a par.

Looking at the table below we can see that in every product category Queensland have made twice as many purchases than any other state. The mode for the number of units sold at any time of purchase was 6 units occurring 452 times, closely followed by 5 units occurring 399 times.

Table

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Table

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Now let us look at the units sold for each product per state per year.

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Graphical user interface, chart, bar chart

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As a general trend, as you progress from 2018 to 2020, the units sold for each product are at their highest in 2018 and then they are more or less on a par with each other in 2019 and 2020. There are a few exceptions, however, this shows that the requirement for businesses is at its highest in 2018 for these products and the main reason why the units sold are not as high in 2019 and 2020 is more than likely to be that consumers have already bought the bulk of their supplies and purchases in 2019 and 2020 are sustaining them.

I am now going to analyse the Average Wholesale Price with the Units Sold per State for each year.

Table

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As we can see it would be better to analyse the data graphically. Therefore, the subsequent Bar Charts show the sum of the Average Wholesale Price opposite the sum of the Units Sold for each year per State.

Chart, bar chart

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Queensland,: We can see that they buy the most of the Bio Waste Kit at a higher Wholesale Price in 2018, the price falls along with the Units Sold in 2019, and in 2020, the Price rises very slightly accompanied by a fall in the Units Sold. Why does Queensland buy at a higher Wholesale Price?. This may coincide with when they have demand. This is particularly evident when I examined the movement of the Wholesale Price on daily basis and at what price Queensland made their purchases.

Tasmania: The wholesale price is at its highest in 2018 along with the Units Sold. In 2019 the price drops significantly along with units sold and in 2020 the price stabilises and the units sold decreases, which reflects demand.

Northern Territory: Their highest number of units purchased were at a higher Wholesale Price in 2018. The price fell slightly in 2019 and the units purchased fell sharply. In 2020 the price rose marginally and the units purchased increased. The units purchased reflects demand at a given time as they will purchase when there is a need and this is a common trend throughout.

New South Wales: Again the highest wholesale price is in 2018 accompanied by the most units purchased. In 2019 the prices falls along with the units sold. In 2020 the price and units sold rises very slightly. As we can see, even if there is a slight rise in price more units have been sold, which again reflects demand at that time.

Victoria: The highest prices are in 2018 along with the most units sold. As the price falls in 2019, so does the units sold and this continues into 2020.

Australian Capital Territory: This follows the same trend as Victoria.

Chart, bar chart

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Queensland and Tasmania: They purchased at the highest wholesale price in 2018 followed by a fall in price and units purchased in 2019, which continued into 2020.

New South Wales and Northern Territory: For these two states the wholesale price rose from 2018 to 2019 and the units purchased fell. Between 2019 and 2020 in New South Wales the price fell and units purchased rose. However, in the Northern Territory between 2019 and 2020, the price and units purchased fell. Again, this shows what the demand was at that time.

Australian Capital Territory: In 2018 the wholesale price and the units sold are at their highest. The price and demand fell in 2019. In 2020, the price rose and so did the units sold.

Victoria: In 2018 the wholesale price was not at it highest but the units sold was. The price rose in 2019 with a decrease in units sold. In 2020 there was a very slight rise in price accompanied with a very slight rise in units sold. Again demand is a factor here.

Chart, bar chart

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Queensland: The wholesale price is at its highest in 2018 with corresponding units sold but falls marginally in 2019 with a significant fall in units sold. In 2020 the price falls significantly and so does the units sold. Again Demand is a factor here, but a continued high price in 2019 corresponded to a fall in units sold.

Victoria: Between 2018 and 2019, price movements were reflected in the units sold as you would logically expect. However in 2020, the price drops significantly, but there is only a very slight fall in units sold.

Australian Capital Territory: The price climbed slightly from 2018-2020 and the quantity sold fell significantly between 2018 and 2019 and was marginally less in 2020.

Tasmania: Between 2018 and 2019 the price rose and the units sold fell. Between 2019 and 2020, the price fell and the units sold rose.

New South Wales: The units sold moved in the same direction as the movement in price.

Northern Territory: From 2018-2019, the price and the units sold fell. From 2019 – 2020, the price rose and the units sold did not change.

Chart, bar chart

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Queensland: The movements in price were reflected in the units sold. This shows that whilst the demand was highest in 2018, it fell in 2019 and fell once more in 2020. This shows that once the demand is satisfied the supplies of this product were maintained.

Australian Capital Territory: The movement in price is reflected in the logical movement in units sold.

Northern Territory: Here the demand has been satisfied in 2018 because although the price fell in 2019, the units sold also fell. From 2019 to 2020, the price fell and the units sold increased.

New South Wales: The movement in price was reflected in the movement of units sold in manner that you would logically expect.

Tasmania: Between 2018 to 2019, the price fell along with the units sold. However, between 2019 and 2020, the price fell again, and the units sold rose.

Victoria: Between 2018 to 2019, the price fell along with the units sold. However, between 2019 and 2020, the price fell again, and the units sold rose.

Graphical user interface, application, bar chart

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Queensland: The activity here is purely driven by demand. In 2018, the price was at its highest and so were the units sold. Then in 2019, the price fell and the units sold fell. In 2020, the price and quantity sold rose.

Victoria: Demand was satisfied in 2018, supplies were maintained in 2019 with the rise in price. In 2020, the price fell and the quantity sold fell. Again this was all driven by demand.

Northern Territory: Between 2018 and 2019 the price fell slightly and the quantity sold fell. Then from 2019 to 2020, the price rose and the quantity sold fell again.

Tasmania: Between 2018 and 2019 the price rose and the quantity sold fell. Between 2019 and 2020, the price rose and the quantity remained the same.

New South Wales: Between 2018 and 2019 the price fell and the quantity sold fell. From 2019 to 2020, the price rose and the quantity rose.

Australian Capital Territory: Between 2018 and 2019, the price rose and the quantity sold fell. Between 2019 and 2020, the price fell and the quantity sold fell.

Chart, bar chart

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In 2018, the wholesale price is at its highest for the following States:

Queensland: The price and quantity sold fell between 2018 and 2019. Between 2019 and 2020, the price fell and the quantity sold rose.

Tasmania and Victoria: The price and the quantity sold fell from 2018 to 2019. Between 2019 and 2020 the price fell and the quantity sold rose.

Northern Territory: The price and quantity sold fell from 2018 to 2019. Then from 2019 to 2020, the price rose and the quantity fell.

Australian Capital Territory: The price and the quantity sold fell between 2018 and 2019. Then from 2019 and 2020, the price and quantity sold rose.

New South Wales: In 2018 the wholesale price was not at its highest. From 2018 to 2019, the price rose and the quantity sold fell. Then from 2019 to 2020, the price fell and the quantity sold rose.

The conclusions we can deduce from the yearly figures of the Average Wholesale Price and Units Sold are as follows:

1. Although the Wholesale Prices were at their highest in 2018, the Units Sold in the majority of cases were also at their highest, which indicates that the demand for these products was also at their highest. In view of this, I also saw that once the demand for a particular product was satisfied in 2018, its supplies were maintained in 2019 and 2020 but not at the same high levels.
2. The data shows that the relationship between Wholesale Price and Quantities Sold is not mutually exclusive because when there is a Demand for a particular product at given time, even if there was increase in price quantities were sold. This highlights the potential shortage in Supply, which results in a rise in price.
3. On some occasions a rise in price was reflected by a fall in the units sold and a fall in price was reflected in an increase in units sold, which is what you would logically expect.
4. It was evident from the data when it was broken down to daily figures that products were frequently bought at higher wholesale prices, therefore the demand for the product was more important than the price that was paid for it and may reflect a shortage in supply. Some states were more cost conscious and purchased more products at cheaper prices consistently, however at times they did make purchases at higher prices, which reflects the need for particular products at a specific time.
5. The mode unit sold per purchase was 6 units closely followed by 5 units.
6. Overall, the highest number of products were sold in 2018, followed a reduced amount in 2019, with this level was maintained in 2020.