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Data and Trend Analysis Memo writing sample

Subject: Weather-related trends in studded tire purchases in Washington state

Introduction

Since weather is tracked at the local level, data from the cities of Seattle and Spokane will be used for this document. The counties in which they reside, King and Spokane, respectively, make up almost 40 percent of overall studded tire purchases in the state.

Most studded tires are purchased during the winter months. For this document, winter months are defined as November through March.

Statewide studded tire sales for FY 2017-2019:

	2017	2018	2019
November	3,511	5,812	3,824
December	26,804	45,203	32,114
January	58,868	29,766	21,331
February	13,945	6,515	4,223
March	3,520	1,668	14,911

Weather Trends by Month

(All historical weather data from [Weather Underground](#))

November

2,301 more studded tires were purchased in 2018 than 2017. This indicates that severe weather affected parts of the state during November 2018.

Spokane – There were 6 days of measurable snowfall in November 2018. This included 4 days over the last week of the month, which was also Thanksgiving weekend, one of the busiest travel holidays of the year.

Seattle – There was no measurable snowfall during November 2018. Therefore, the increase in studded tire purchases was due to snowfall in other parts of the state.

December

18,399 more studded tires were purchased statewide in 2018 than 2017. This indicates that severe weather affected the state during the December 2018.

Spokane – There were 9 days of measurable snowfall in December 2018. A snowstorm also occurred on December 17-18, which likely resulted in additional studded tire purchases as

people prepared for their holiday travel. December 2019 had 3 days of measurable snowfall, but one of the days was Friday, December 20, a significant travel day. This is one likely reason studded tire purchases were 19 percent higher in 2019 than in 2017.

Seattle – There was no snowfall in December 2017-2019. Therefore, the increase in studded tire sales was likely due to either King County residents traveling to snowy parts of the state or snowfall in other parts of the state.

January

Studded tire sales were 97.7 percent higher statewide in January 2017 compared to 2018. This means that there was an incredible amount of demand in January 2017, the result of a significant snowstorm that blanketed the region that month.

Spokane – There were 4 days of measurable snowfall in January 2017, but two of those days were significant snowstorms. Snow was also likely on the ground throughout the month, resulting in increased demand for studded tires.

Seattle – There were two days of measurable snowfall in Seattle in 2017, including one very significant snowstorm on January 18. This likely resulted in greatly increased demand for studded tires in Western Washington and throughout the state.

February

Over 3,000 more studded tires were purchased in February 2017 than in 2018 and 2019 combined. This indicates severe weather in the state during the month. The first two months of 2017 were unusually snowy in Seattle and Western Washington, which resulted in significantly higher sales of studded tires statewide.

Spokane – There were 4 days of measurable snowfall in February 2017, but none of the days recorded a significant amount of snow.

Seattle – There were 3 significant snowstorms in Seattle during February 2017 that left the entire region dealing with snow-packed streets for several weeks.

March

There was a 793 percent increase in studded tire purchases in 2019 compared to 2018. This indicates that a major snowstorm hit the state during the month.

Spokane - In 2019, there was a very significant snowstorm on March 13, which may have taken residents by surprise. Those who did not have studded tires or had taken them off likely purchased new tires during and after the snowstorm.

Seattle – There was no measurable snowfall in Seattle during March 2019. Therefore, the increase in studded tire sales was likely due to either King County residents traveling to snowy parts of the state or snowfall in other parts of the state.

Analysis

- Based on the weather data, studded tire sales closely correlate with snowfall. This is not surprising, but geography is also a factor. Significant snowstorms in Western Washington in early 2017 led to record high levels of studded tire purchases that year. In 2019 there were no major snowstorms in Western Washington and studded tire purchases were lower statewide than the two years prior, even with at least one major snowstorm in Spokane.
- Counties that do not typically receive a lot of snow greatly increase their studded tire purchases when major snowstorms hit the region. Most counties vary by only a few percentage points year-to-year in studded tire sales, but residents of Snohomish County purchased 148 percent more studded tires in 2017 than in 2018 and 2019. Residents of Skagit County, which borders Snohomish County to the north, actually purchased fewer studded tires in 2017 than they did in 2018 and 2019. This indicates that the snowstorms that blanketed Snohomish County and the concomitant demand for studded tires were geographically concentrated.
- Spokane County led the state in both number and percentage of studded tires sold statewide. This is because of its relatively high population and its location in the coldest and snowiest part of the state. King County had the second-highest number of sales because it is the most-populated county in the state. The percentage of cars with studded tires in the county is significantly less than other counties even with its higher percentage and number of overall tire sales.