RELATIONSHIP BETWEEN CLIMATE AND SNOWMOBILE SALES
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Abstract
Casual observations in northern climates have shown that mild winters lead to a reduction in snowmobile sales. This study compared the relationship between winter climate and snowmobile sales, hypothesizing that when mild winters occur snowmobile ownership declines. A general study was performed by region across the United States, while a more specific, detailed study was done on key cities in Wisconsin, a state well known for its snowmobiling industry. Climatic data including temperature, winter precipitation, and snowfall was collected from the Wisconsin State Climatology Office. National snowmobile sales data, organized by region, were obtained from International Snowmobile Manufacturer’s Association. Local snowmobile sales data for Wisconsin was gathered from Eau Claire and Milwaukee, Wisconsin newspaper classified advertisements. This poster focuses on local snowmobile sales.

Background
This project was originally conceived in an Environmental History course while discussing climate change. Dr. Joe Hupy wondered weather a reduction in snowmobiles had been observed. Since no study had been conducted on this topic, one was set in motion. Ideally, snowmobile sales by county over a span of years would have been great. Numerous dealerships were called but no sales records seemed to have been kept. Next, corporate headquarters were contacted. Polaris Industries and Arctic Cat Inc. were contacted individually but they seemed unwilling to cooperate. Because of this, the study had to be changed. Just looking at classified ads for two cities in Wisconsin and then comparing these two cities. Two considerations have to be kept in mind when dealing with classified ads: 1) they aren’t a current sales record and show dated products being sold and 2) with the advent of the Internet ads tend to taper and decrease in number within the last decade. With these drawbacks, we still wanted to complete the study so we went forward using classified ads and weather data for two cities in Wisconsin. Climatic data was more forthcoming and we are deeply indebted to Dr. Edward Hopkins at the Wisconsin State Climatology Office.

United States Snowmobile Sales (1977-2008*)

Wisconsin Temperature and Snowfall (1977-2008*)

Local Snowmobile Sales (Eau Claire and Milwaukee)

Conclusions and Going Forward
Based on the data collected, a relationship does appear to exist between climate and snowmobile sales. One readily affects the other. Ideally, it would have been beneficial to have numbers direct from the dealerships to ensure greater accuracy. Future studies could possibly obtain that information.

Theoretical Model for this Study
The figure to the left shows temperatures and snowmobile sales for Eau Claire and Milwaukee, WI. Theoretically, as temperatures are higher snowmobile sales should be low and vice versa. The basis of this study was to see if this occurred.

The graph of Eau Claire follows the temperature/sales thesis fairly well. Take for example 1981. The average temperature for that year was around 39ºF while sales number were around 75 snowmobiles. This conveys a low temperature, high sales year. Now take 2001. The average temperature was 46ºF and sales were 40 snowmobiles. This conveys a high temperature, low sales year.

Anomalies do exist where the temperature/sales thesis fails. The years 1989 and 1990 are good examples. In 1990 temperatures were high and sales were high relative to the rest of the study period. Many reasons could exist for this; an anticipation of a cold winter, the economy, etc.

The graph of Milwaukee also follows the temperature/sales thesis well. This graph differs from Eau Claire in that sales continually rise until their peak in 1996. Since then sales have been on the decline. But this should be the theoretical results. As sales were climbing to 1996 and then falling since then, temperatures were relatively high. In the peak year of 1996, when over 400 sleds were sold, the temperature was the lowest (46ºF) in the 30 year study period with the exception of 1989 (45ºF). When sales were high, temperatures were low, vice versa.

Not many anomalies exist in the Milwaukee graph. There are points where the lines of temperature and sales come close to being the same value. But this is typical, the lines have to cross somewhere.

Snowfall for Eau Claire and Milwaukee (1977-2008*)

Snowfall for Eau Claire and Milwaukee (1977-2008*)

Acknowledgements
The above graphs show snowfall in inches for both cities for the last 30 years. Both trendlines (black) show that snowfall has declined in the last 30 years, more so for Eau Claire than Milwaukee. These two graphs can readily be compared to the figure to the left.

*2008 Data Not Complete

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This study also opens the door for similar studies. Research could be carried out on other snow related products such as snow blowers and snow shovels. One could also examine all terrain vehicle (ATV) sales. Studies of this type could enhance business procedures and bottom lines.

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And to all those who have sold a snowmobile in the Eau Claire and Milwaukee areas during the last thirty years.