

# TechnoMetrica Auto Demand Index

December 2013



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# About Us

- TechnoMetrica, founded in 1992, is a full-service Market Research consultancy that helps businesses identify, develop and capitalize on growth opportunities. Spotting trends and synthesizing insights that are well-defined, accurate, and forward-thinking is our passion. Research is the foundation for all our endeavors.
- TechnoMetrica is a thinkery. We harness the power of creative thinking in everything we do: to develop study designs that best answer research objectives; to communicate research findings with impact; to develop effective marketing strategies and new product development. Our creations are the true testimonies that reflect our depth of thinking. Our clients are our ambassadors of our reputation.
- In 1996, TechnoMetrica founded TIPP – the TechnoMetrica Institute of Policy and Politics. Shortly thereafter, TIPP joined forces with Investor’s Business Daily (1996 to present) – the nation’s fastest-growing financial publication – to produce their highly respected IBD/TIPP Economic Optimism Index. TIPP also has a similar polling partnership with the Pulitzer Prize-winning Christian Science Monitor (1998 to present).

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# **I. Methodology**

# Methodology

- TechnoMetrica's Auto Demand Index is a forward looking early (monthly) indicator of consumers' intent to purchase or lease a new vehicle within the next 6 months. The index has been set to an initial value of 100 based on demand levels between February 2007 and April 2007, the strongest selling season in the past decade.
- The Auto Demand Index is based on the responses Americans give to the question:
  - *How likely is it that you will buy or lease a new vehicle within the next 6 months? Would you say very likely, somewhat likely, not very likely or not at all likely?*
- We express purchase intent as an index score that varies as a linear function of the percentage of consumers who are either "very" or "somewhat" likely to purchase or lease a new vehicle within the next 6 months.
- Higher index readings correspond to greater demand or intent to purchase/lease new automobiles.
- The index and its movement is projectable to the national market for new automobiles, which consists of over 100 million U.S. households with drivers.
- Each month, TechnoMetrica uses a monthly Random Digit Dial (RDD) telephone survey to collect the survey data, with a sample size of 907 respondents. The margin of error is +/- 3.3 percentage points. The December Survey was conducted November 21<sup>st</sup> – November 25<sup>th</sup>.

## **II. Auto Demand Index, Purchase Outlook**

**A. Auto Demand Index (Overall)**

**B. By Region**

**C. By Area Type**

**D. By Age**

**E. By Gender and Marital Status**

**F. By Parental Status and Race/Ethnicity**

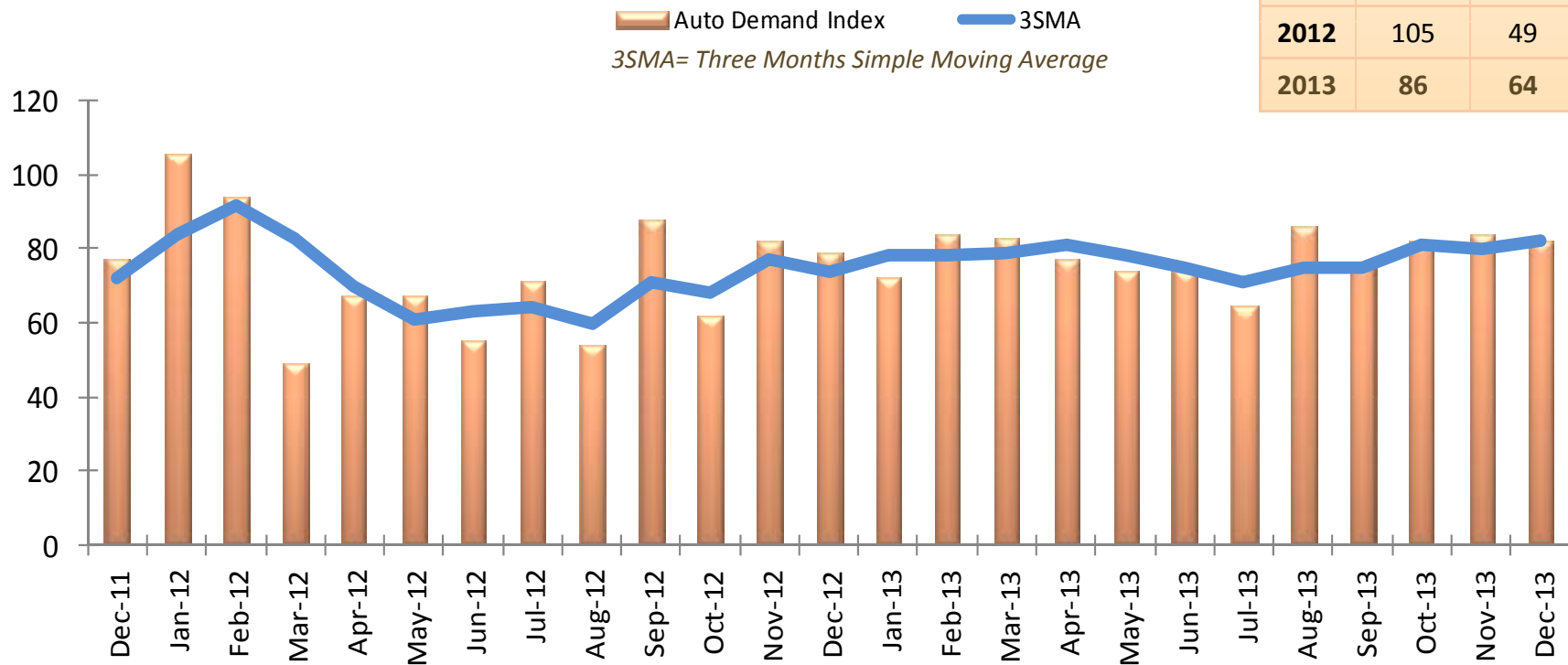
**G. By Household Income**

# Auto Demand Index (Overall)

The Auto Demand Index level fell slightly this month, to 82. In November, the ADI level was 84.

Base = All Respondents

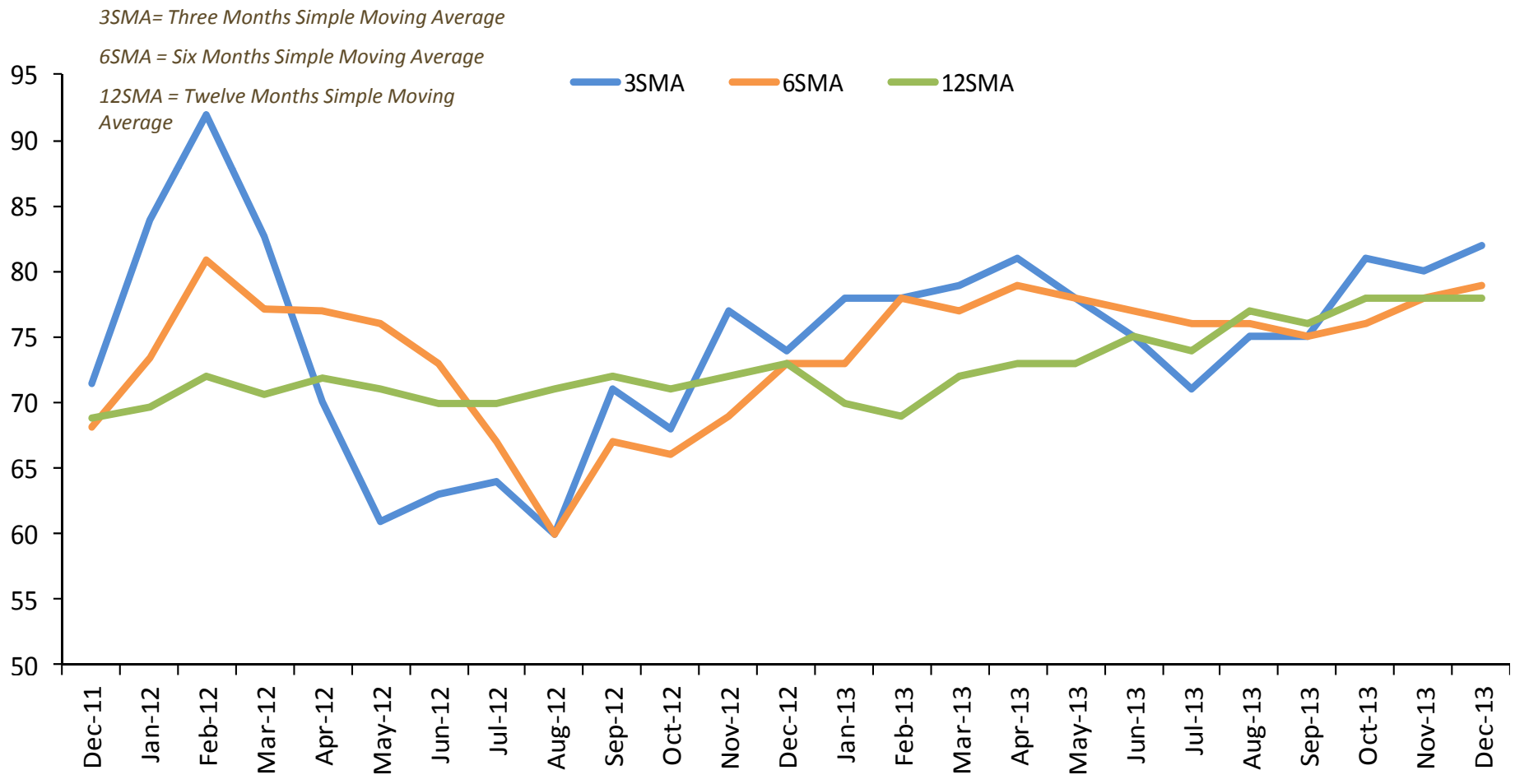
	High	Low
<b>2007</b>	129	79
<b>2008</b>	92	66
<b>2009</b>	95	55
<b>2010</b>	97	56
<b>2011</b>	94	49
<b>2012</b>	105	49
<b>2013</b>	86	64



# Auto Demand Index Moving Averages

Base = All Respondents

Momentum continues to build for purchase intent, as both the 3 month and 6 month moving averages increased slightly in December. Meanwhile, the 12 month moving average remains unchanged from November.



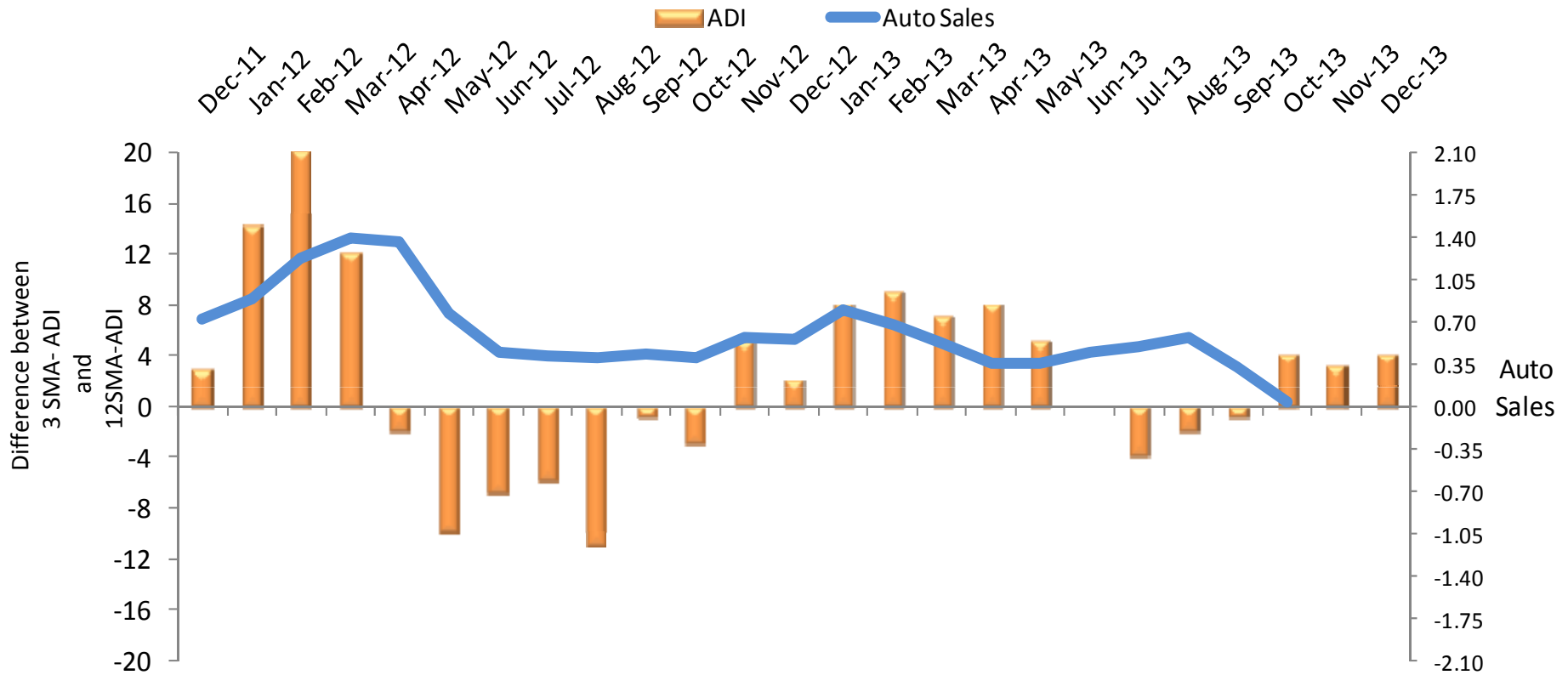


# Momentum

Momentum Measure = Fast Average (3-month) minus Slow Average (12-month)

Base = All Respondents

After slowing down in November, momentum has picked up slightly this month.

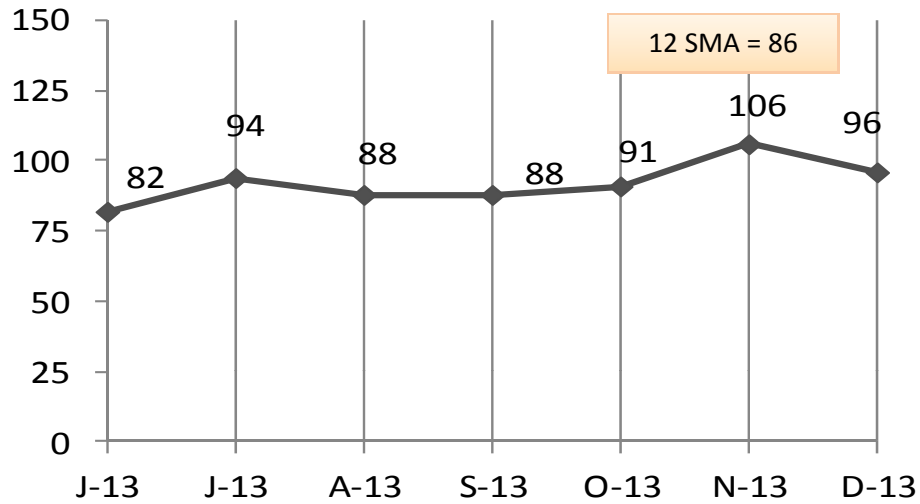


Difference between 3SMA auto sales and 12SMA auto sales

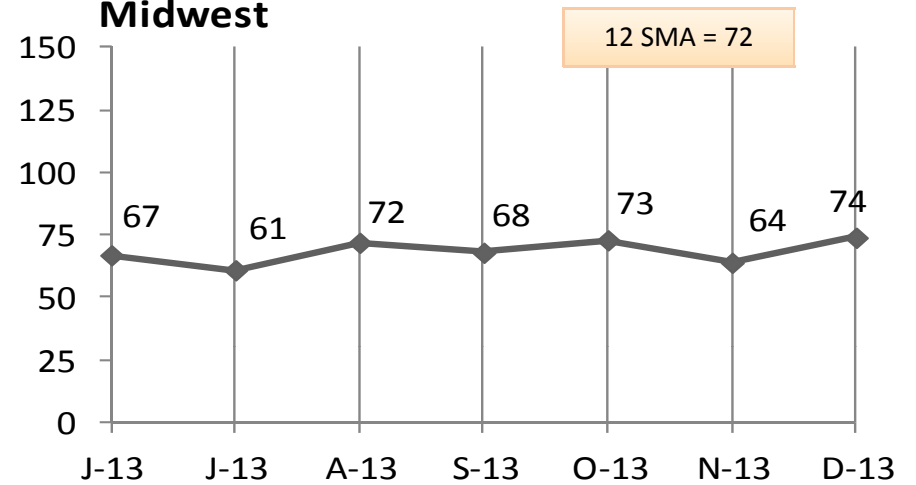
# By Region 3 SMA

Base = All Respondents

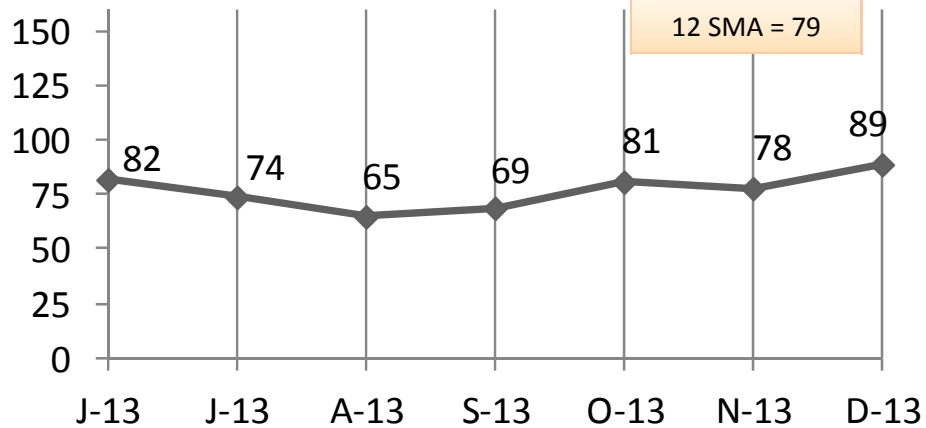
## Northeast



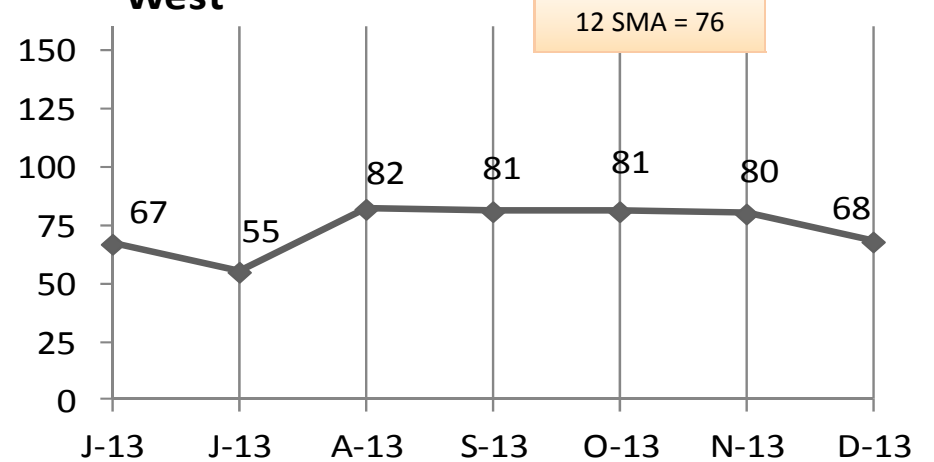
## Midwest



## South



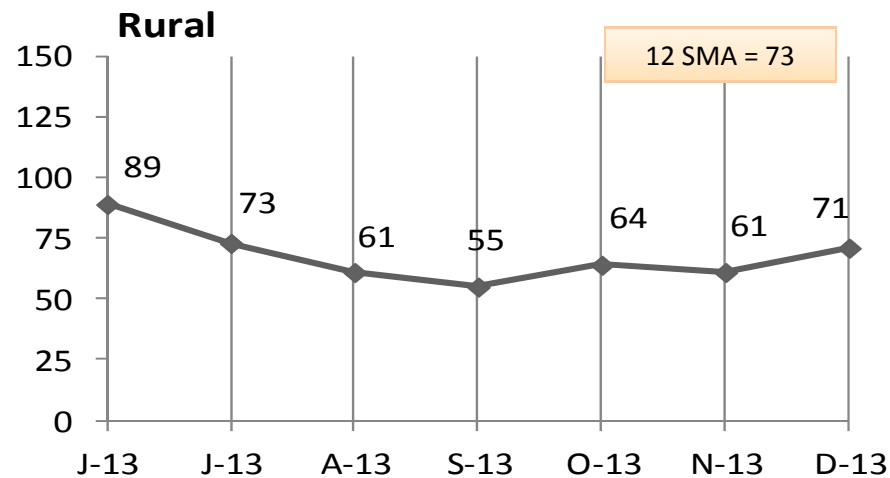
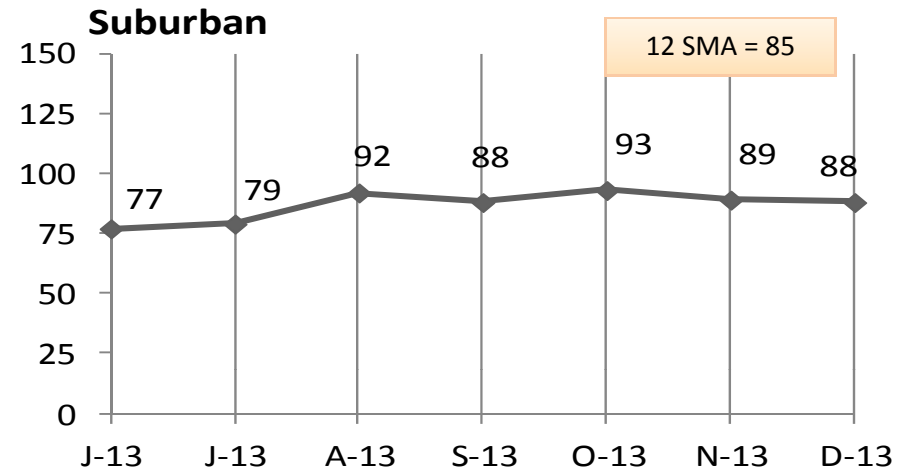
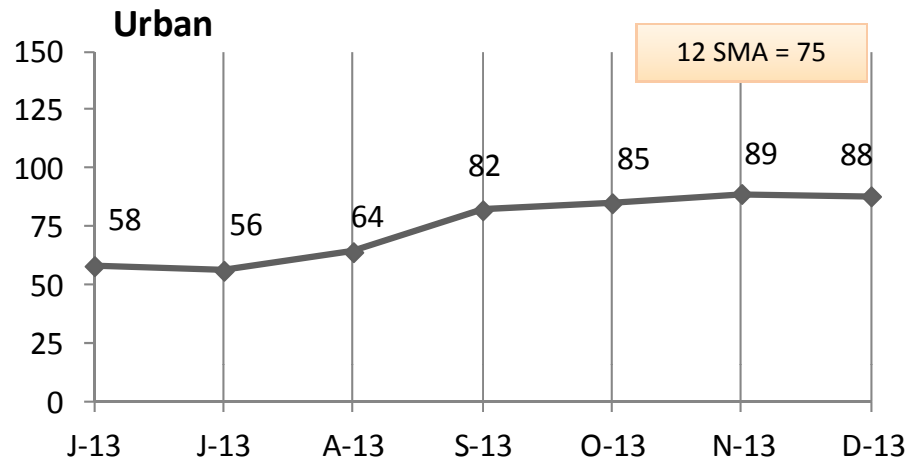
## West



Q. How likely is it that you will buy or lease a new vehicle within the next 6 months?

# By Area Type 3 SMA

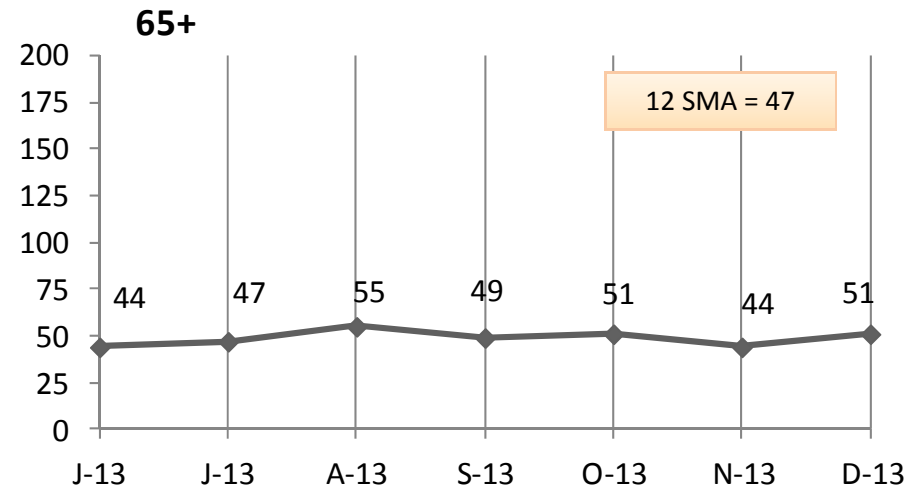
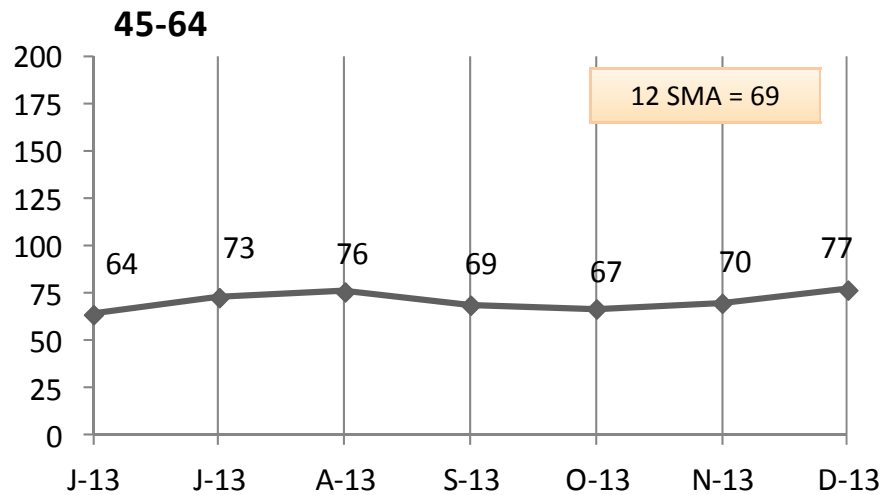
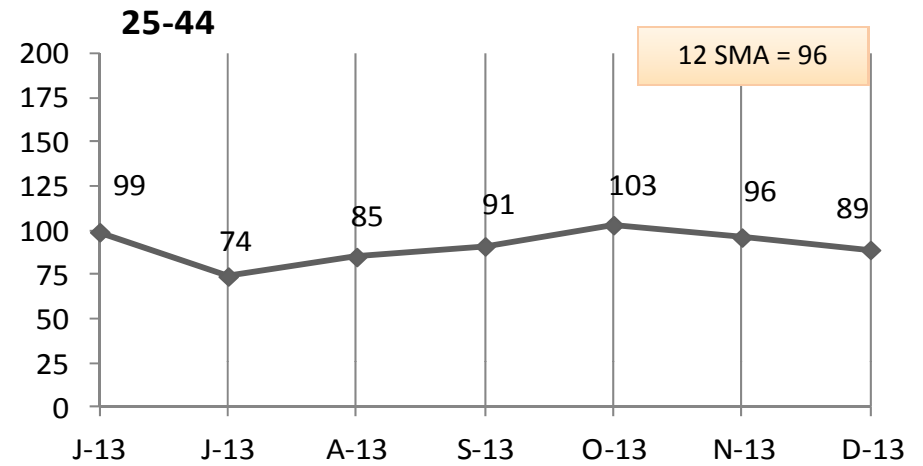
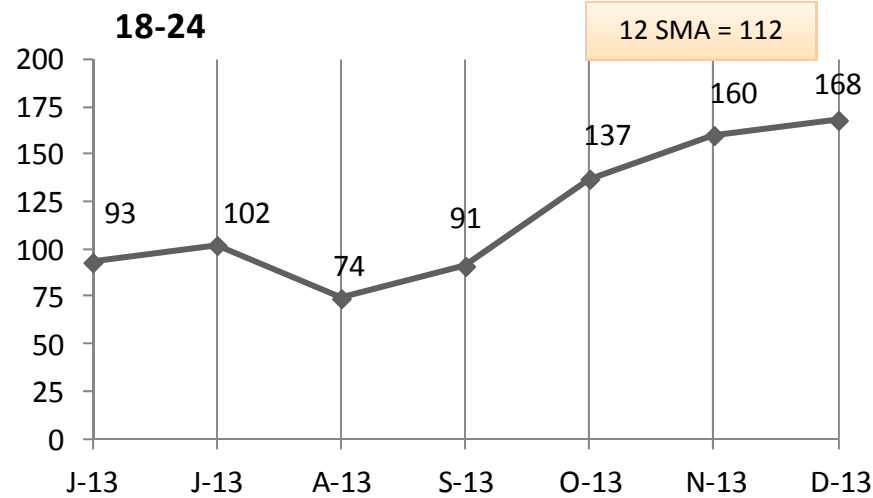
Base = All Respondents



Q. How likely is it that you will buy or lease a new vehicle within the next 6 months?

# By Age 3 SMA

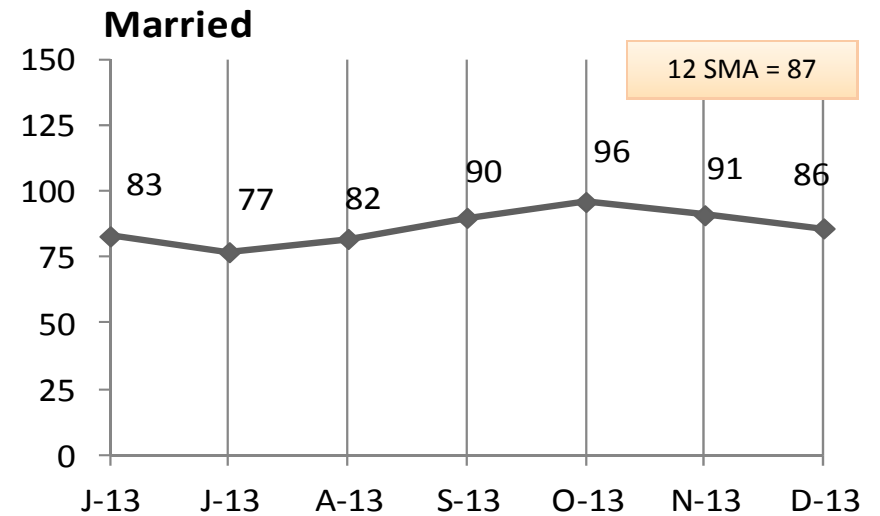
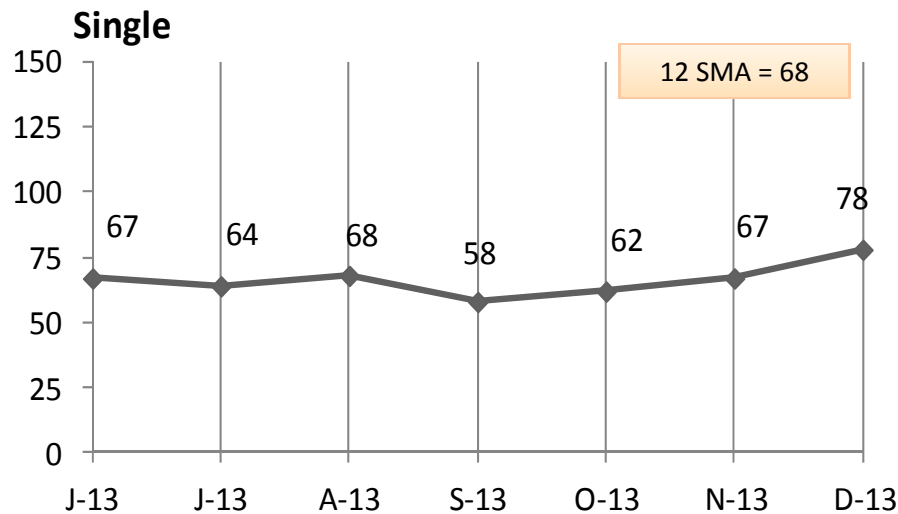
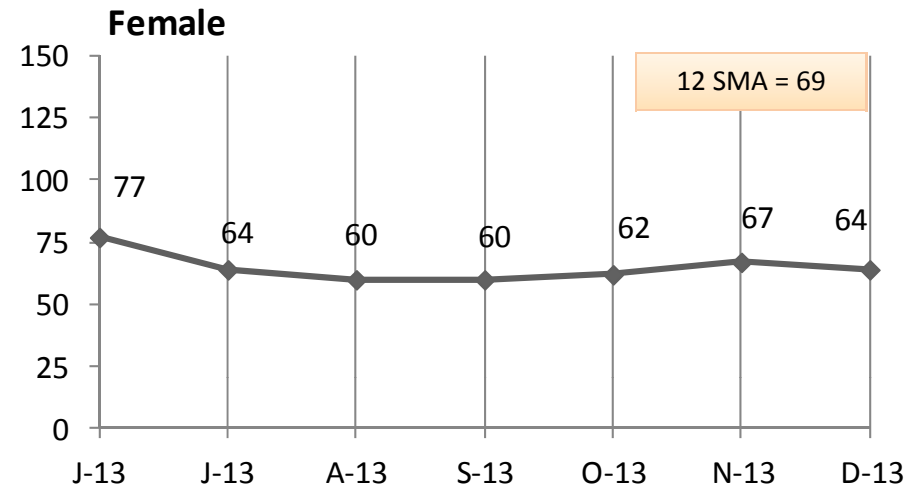
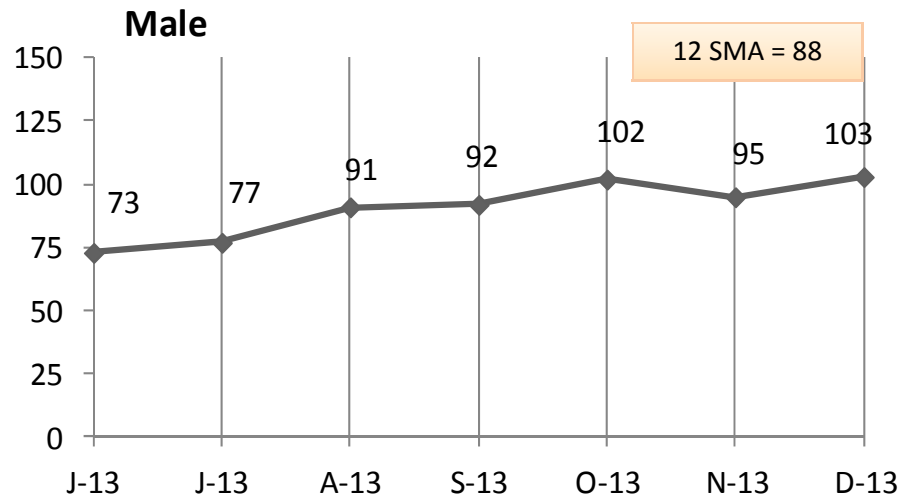
Base = All Respondents



Q. How likely is it that you will buy or lease a new vehicle within the next 6 months?

# By Gender and Marital Status 3 SMA

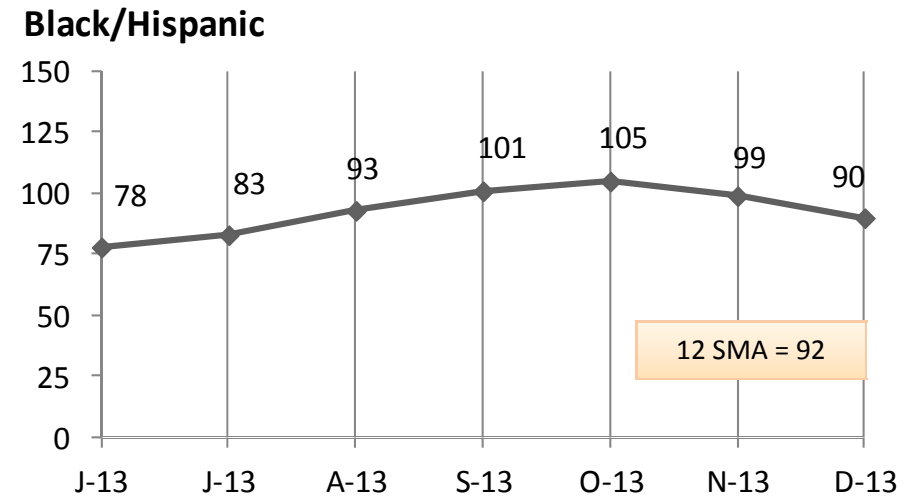
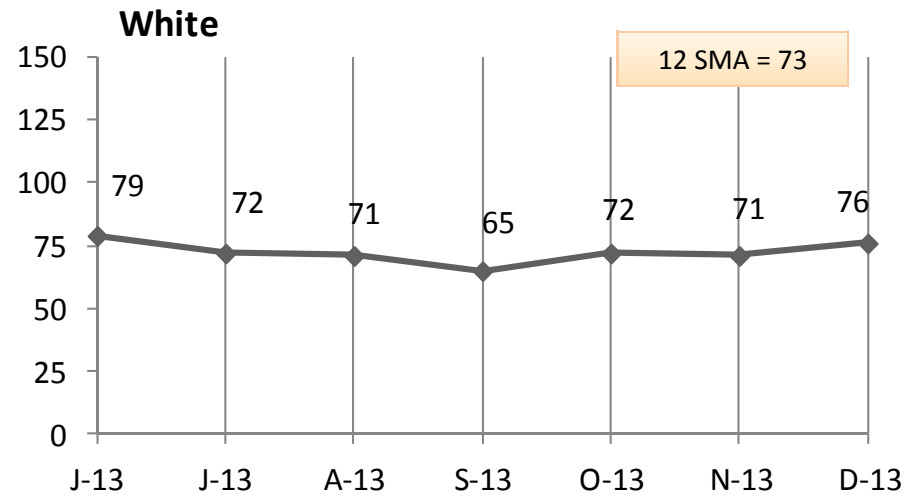
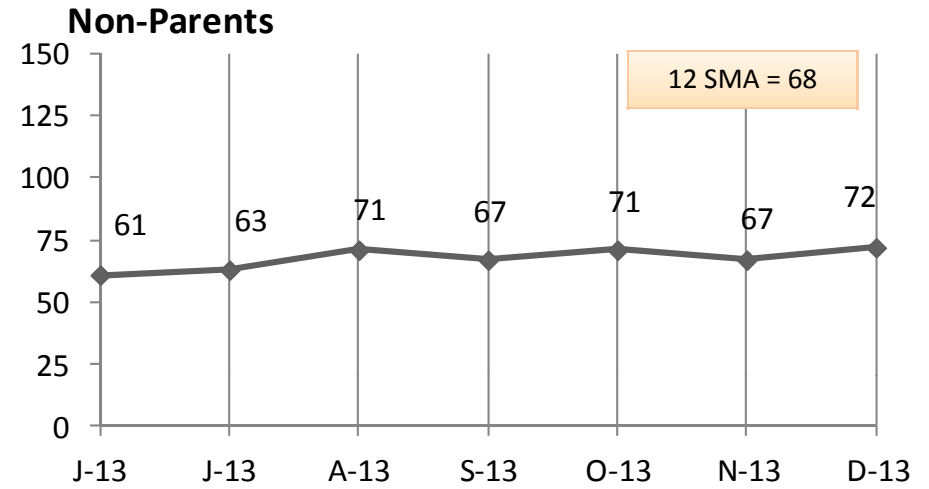
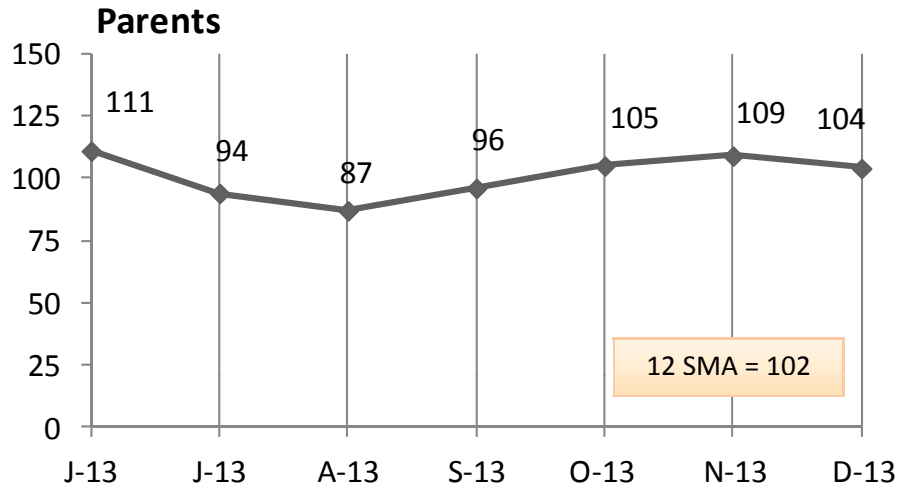
Base = All Respondents



Q. How likely is it that you will buy or lease a new vehicle within the next 6 months?

# By Parental Status and Race/Ethnicity 3 SMA

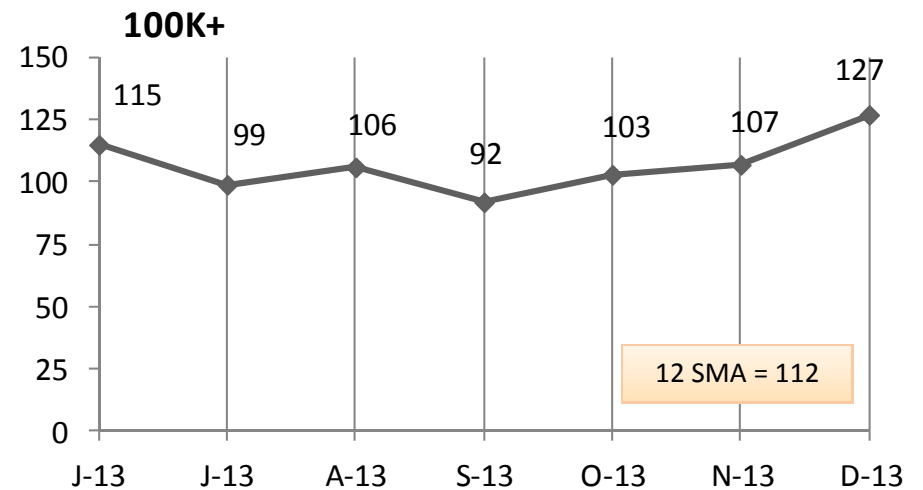
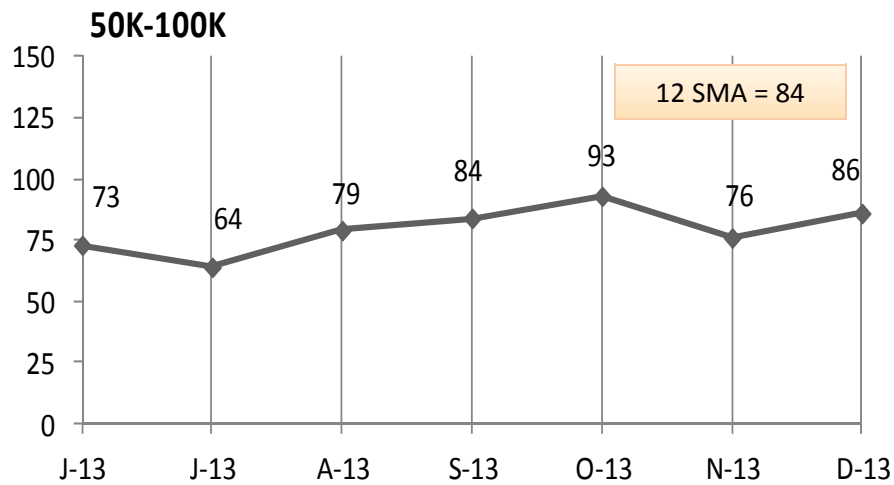
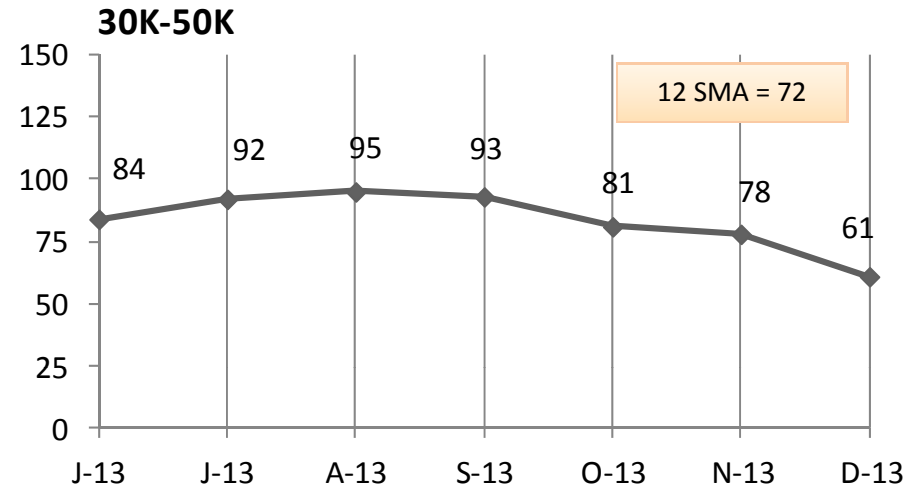
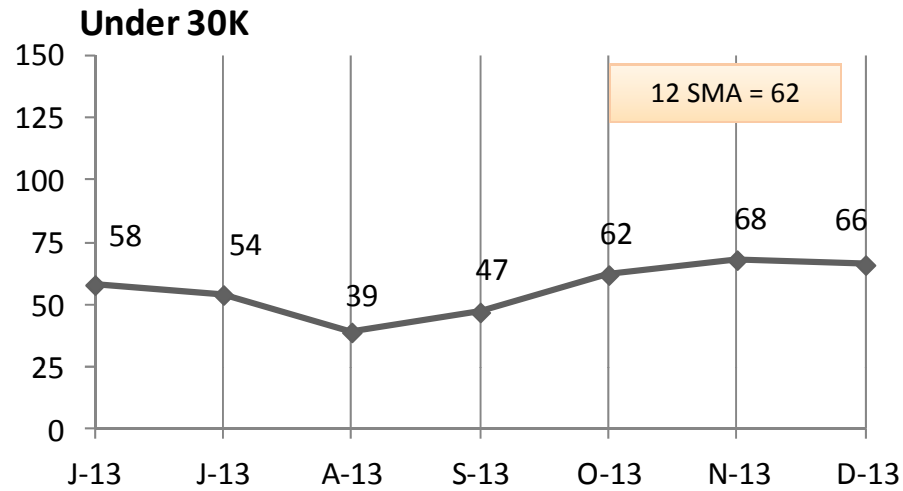
Base = All Respondents



Q. How likely is it that you will buy or lease a new vehicle within the next 6 months?

# By Household Income 3 SMA

Base = All Respondents



Q. How likely is it that you will buy or lease a new vehicle within the next 6 months?

### **III. Demand For New Autos**

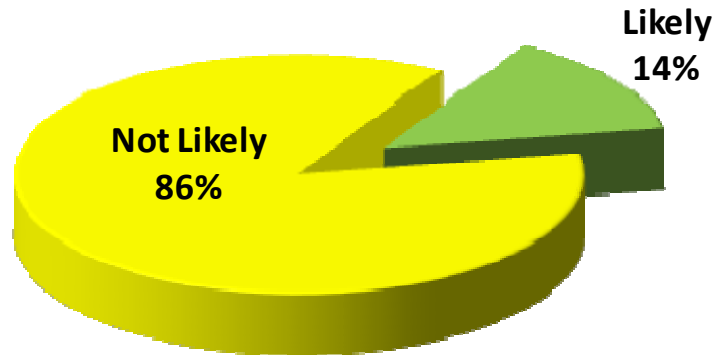
- A. Vehicle Purchase/Lease Plans: Overall**
- B. Vehicle Purchase Plans: Purchase Likelihood Over Time**
- C. New Vehicle Purchase/Lease Time Frame**
- D. Vehicle Types Momentum**
- E. Preferred Vehicle Types 3 SMA**



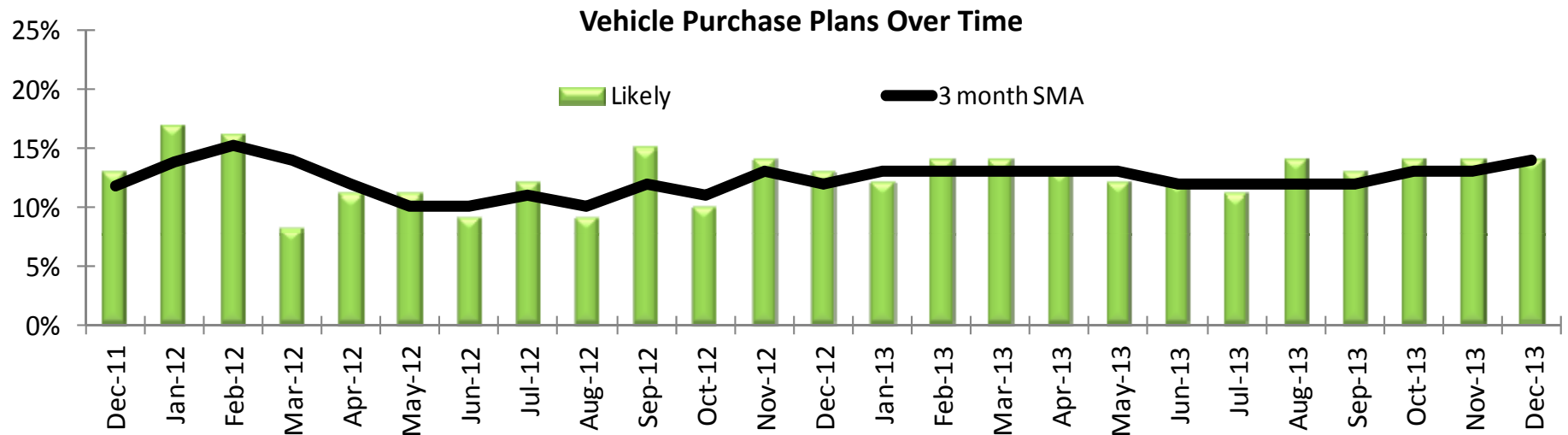
# Vehicle Purchase Plans

December 2013

Base = All Respondents



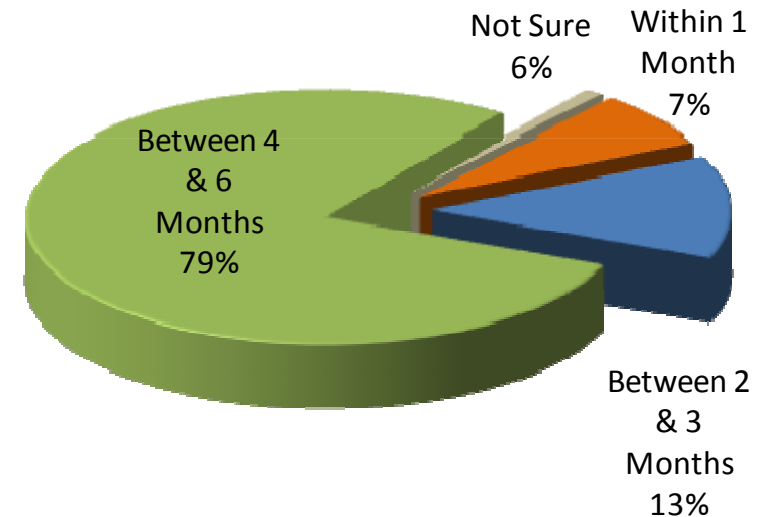
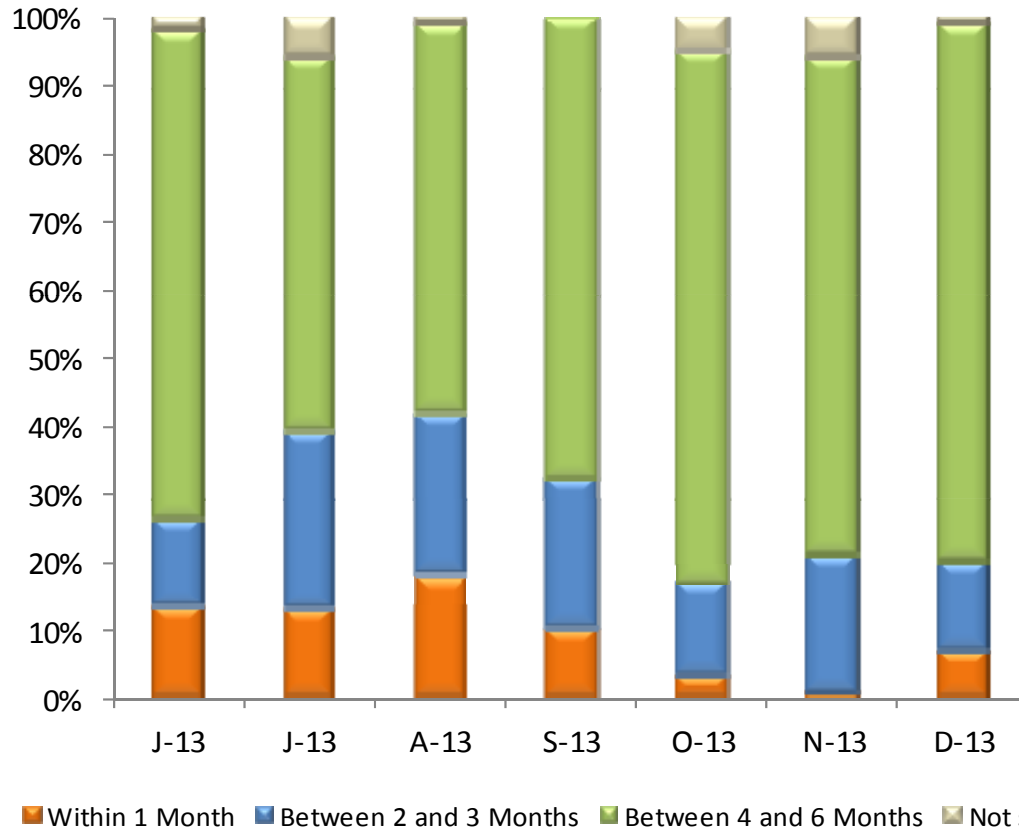
In November, the share of Americans who said they were likely to purchase or lease a new vehicle in the next six months is 14%, which is unchanged from the previous month.



# Vehicle Purchase/Lease Time Frame

December 2013

Base = Potential Buyers



Of these likely to purchase or lease, only 7% say they will do so within one month, while 13% say they will do so within 2 to 3 months. Nearly eight in ten (79%) are planning to do so further out (within 4 to 6 months).

In December, the percentage of likely vehicle buyers within one month increased to 7%, from 1% in November.

*Q. Will you make your purchase within the next month, 2 to 3 months, or in 4 to 6 months?*

# Vehicle Type Momentum

December 2013

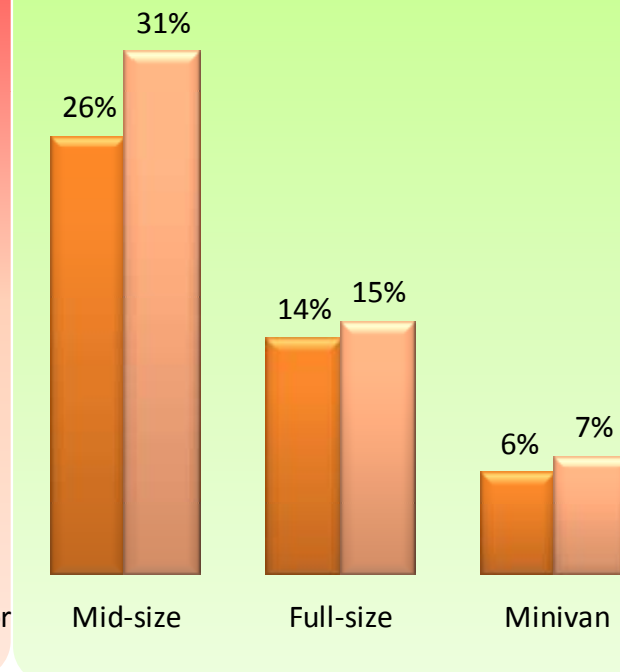
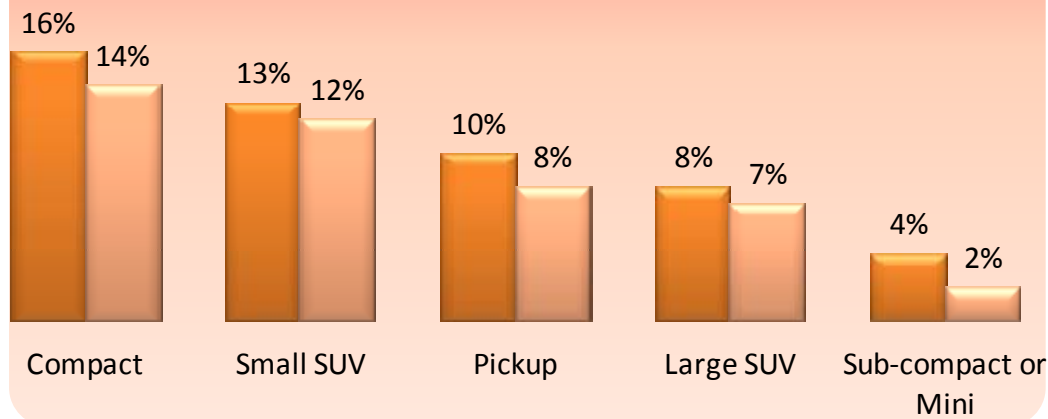
Base = Potential Buyers

■ 12 Month Average

■ 3 Month Average

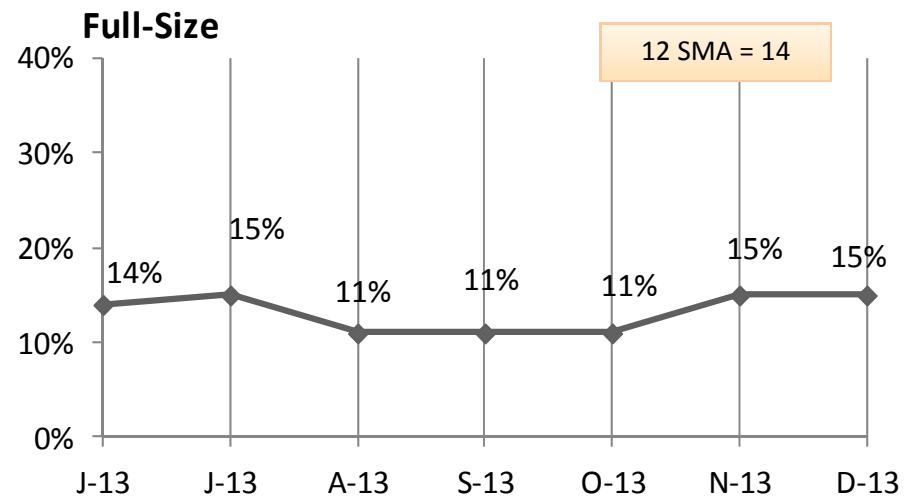
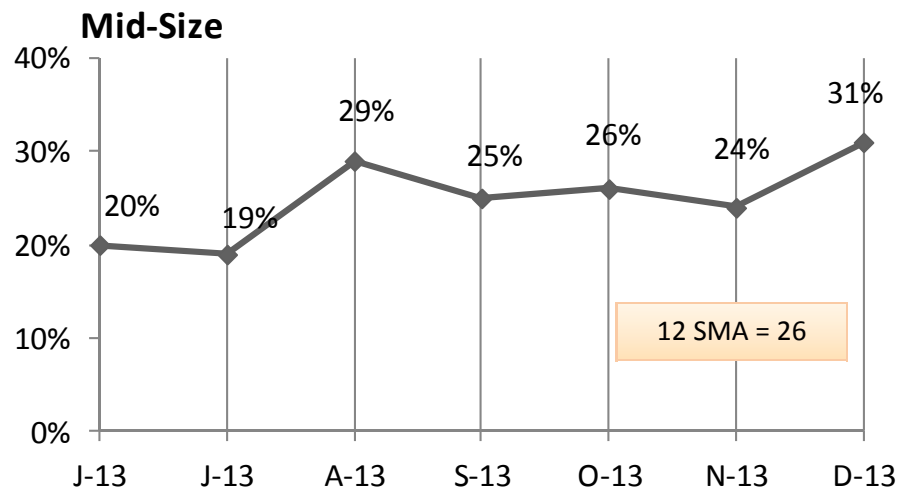
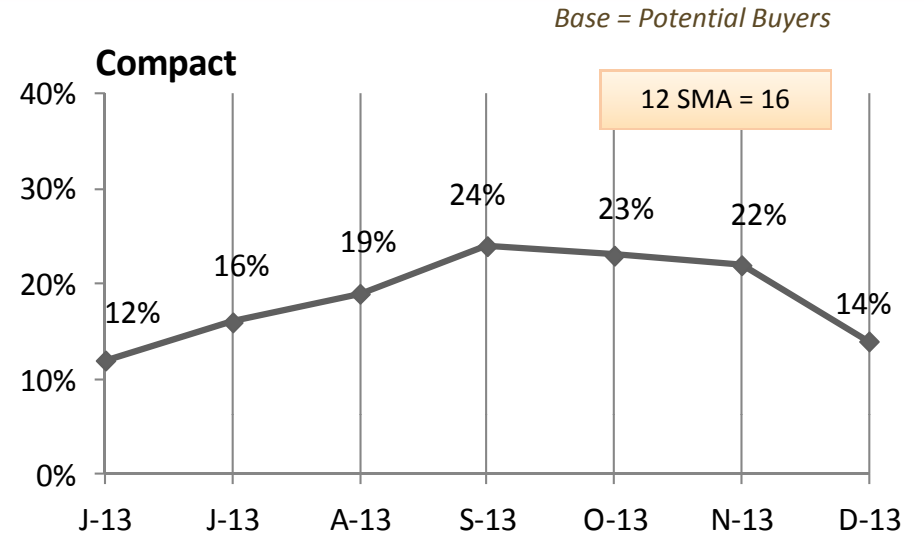
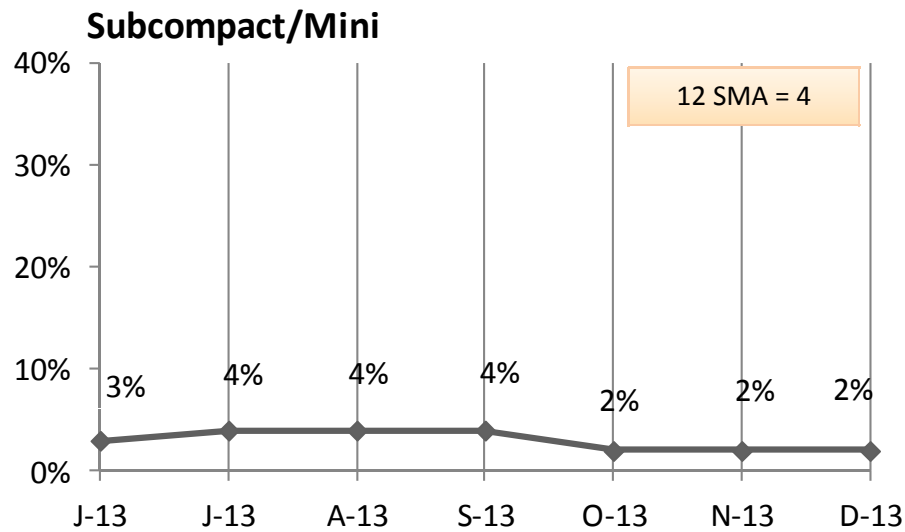
Negative Change

Positive Change



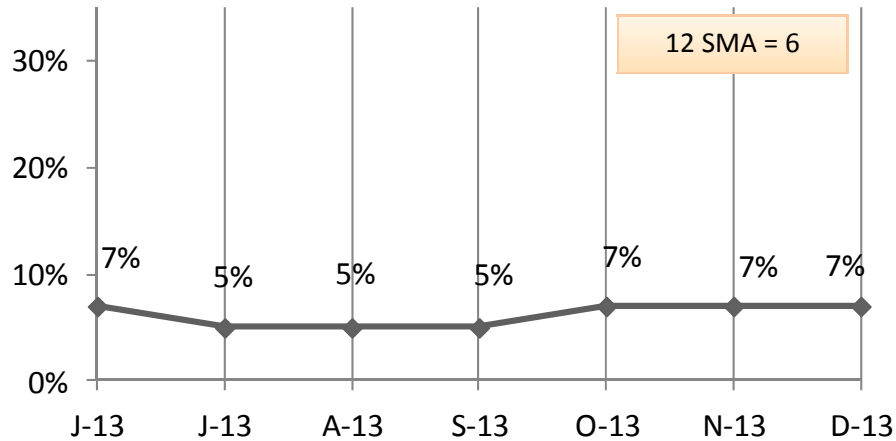
Q. What type of vehicle are you most likely to buy or lease?

# Preferred Vehicle Types Over Time - 3 SMA

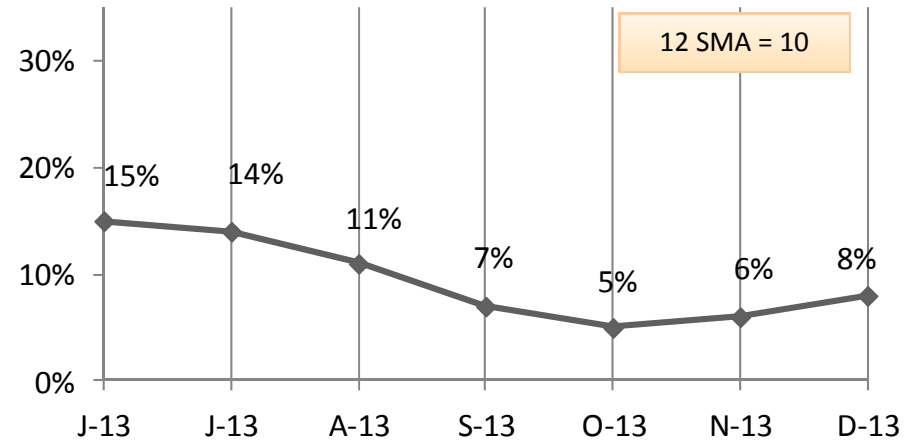


# Preferred Vehicle Types Over Time - 3 SMA

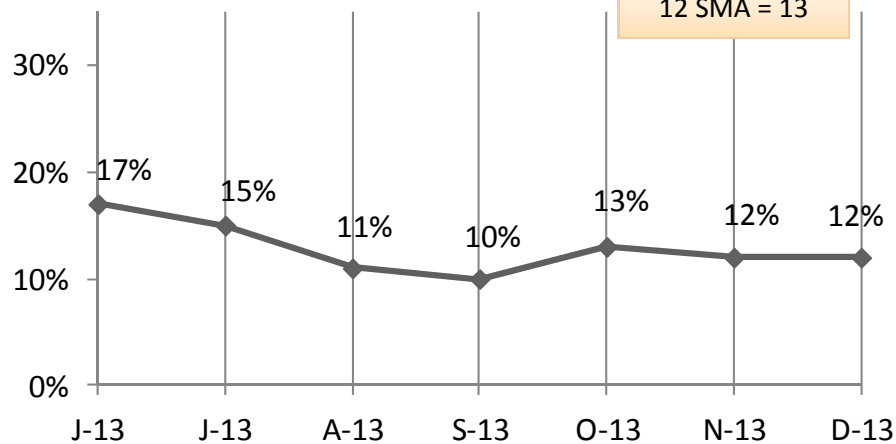
**Minivan**



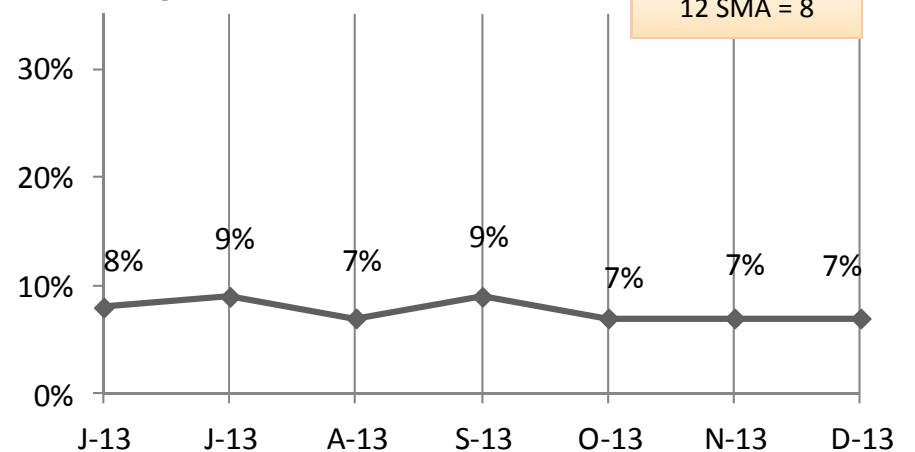
**Pickup**



**Small SUV**



**Large SUV**



## **IV. Brand Preferences**

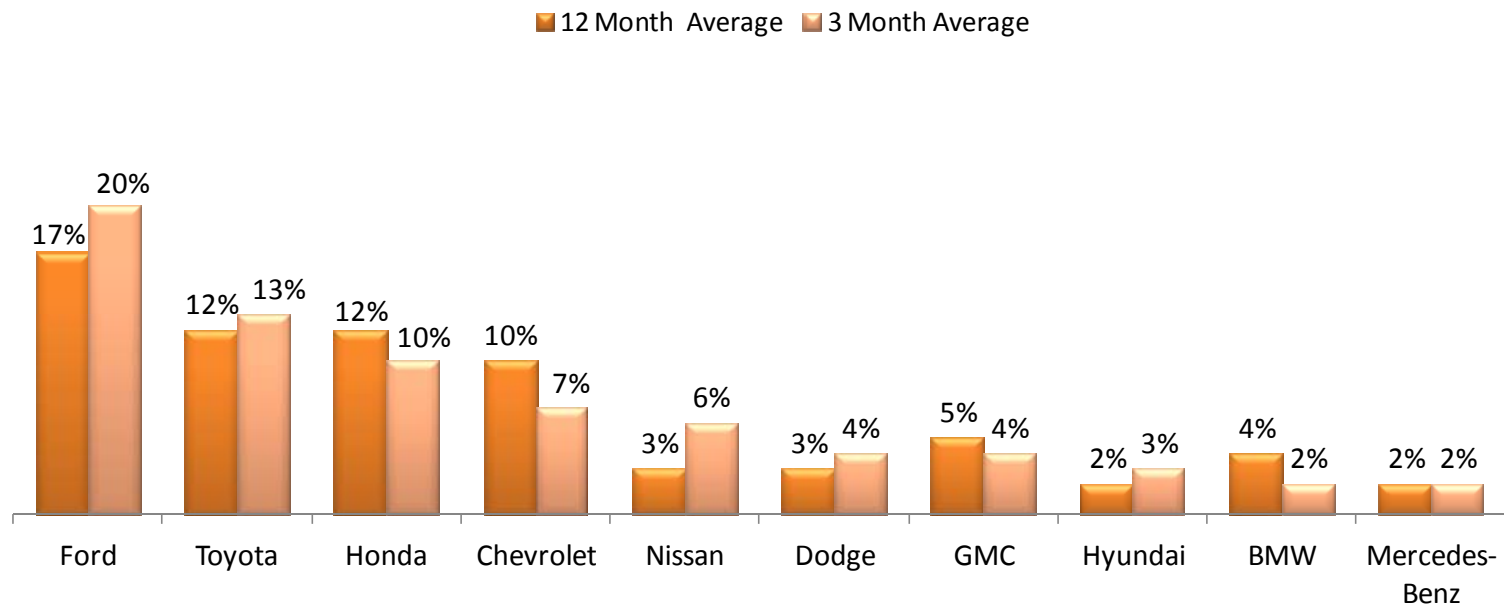
**A. Top Ten Brands Consumers Would Buy**

**B. Brand Preference Over Time 3 SMA (Top Ten Brands)**

# Top Ten Brands Consumers Would Buy Today

December 2013

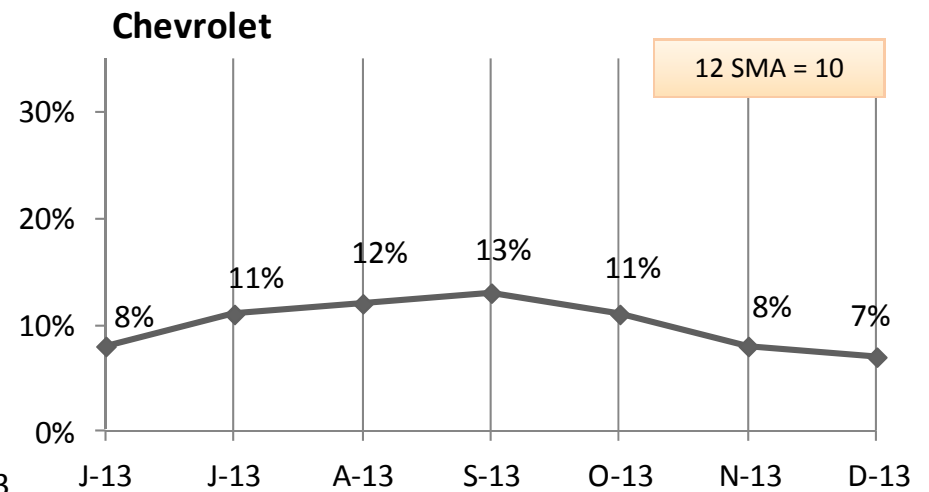
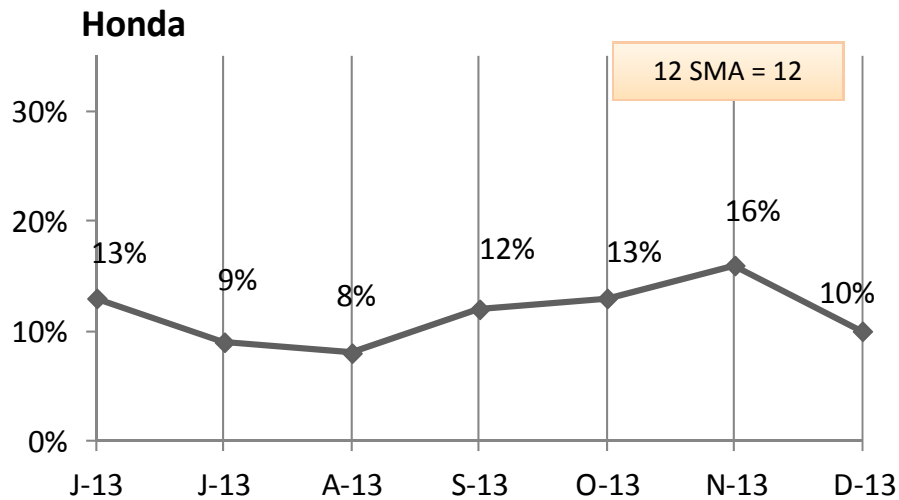
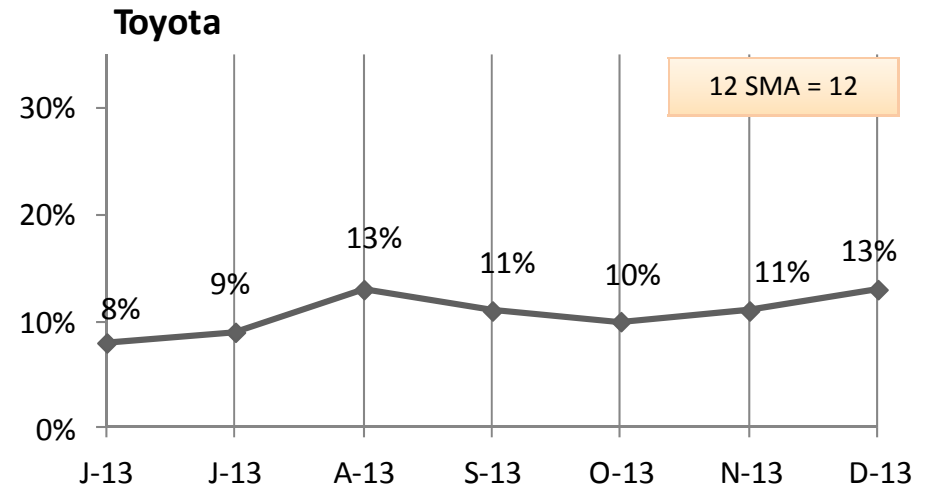
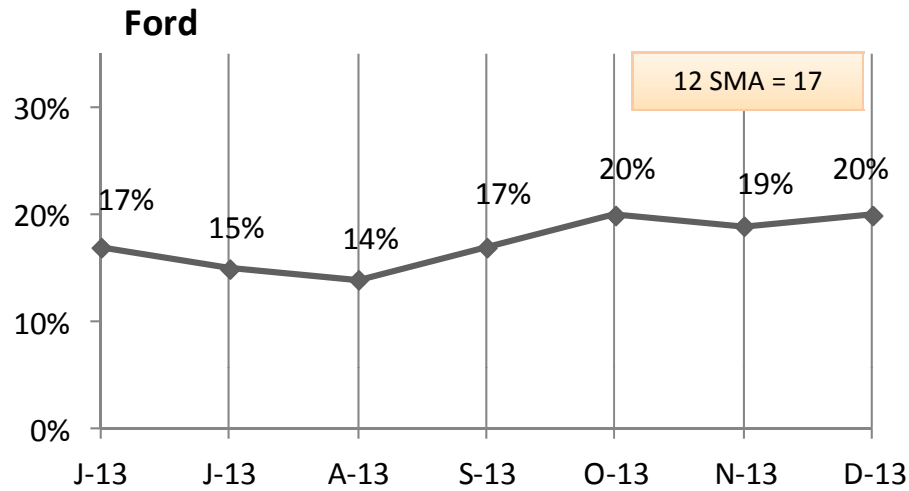
Base = Likely Buyers



Sorted by 3SMA

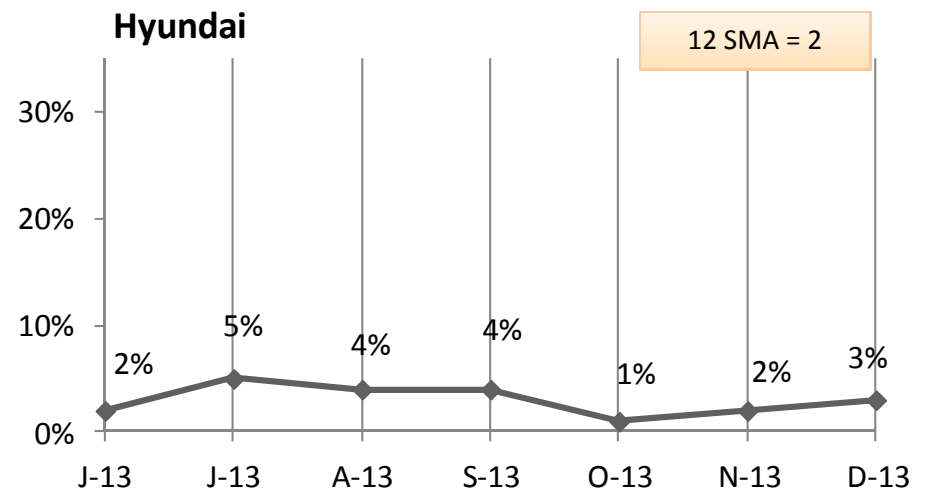
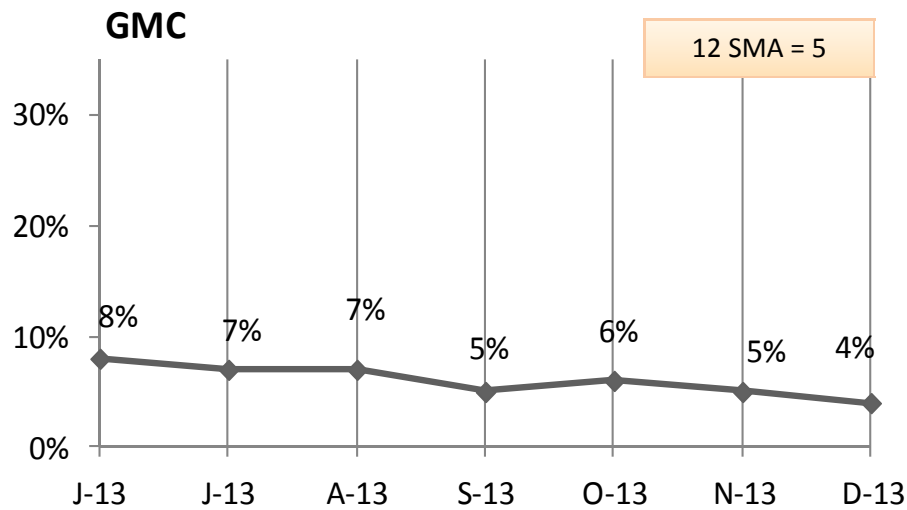
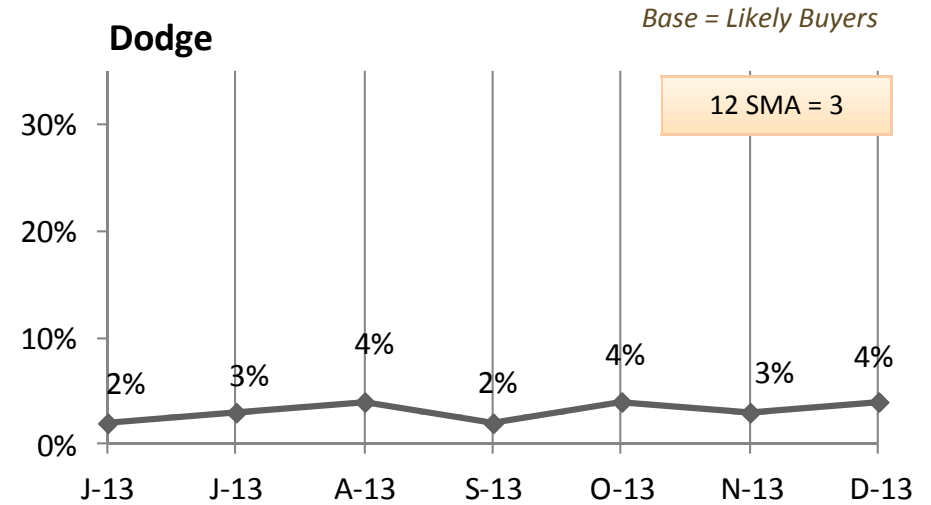
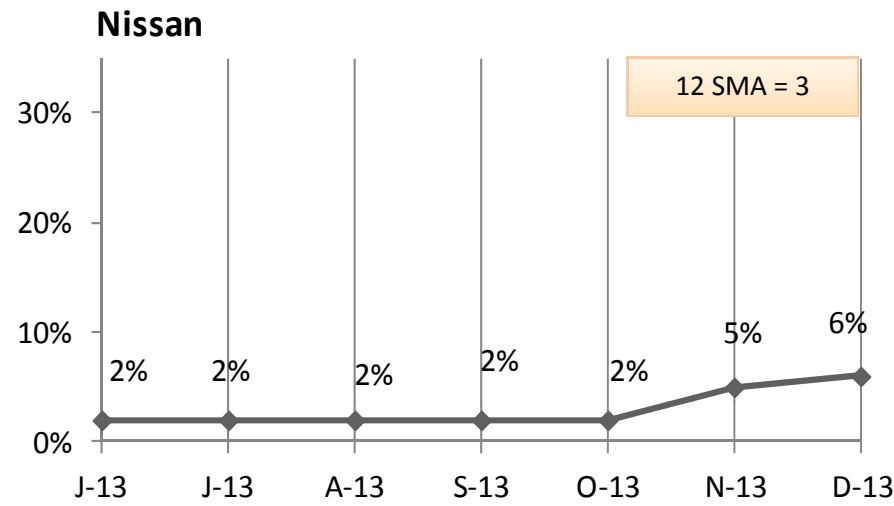
# Brand Preference Over Time 3 SMA (Top 4 Brands)

Base = Likely Buyers

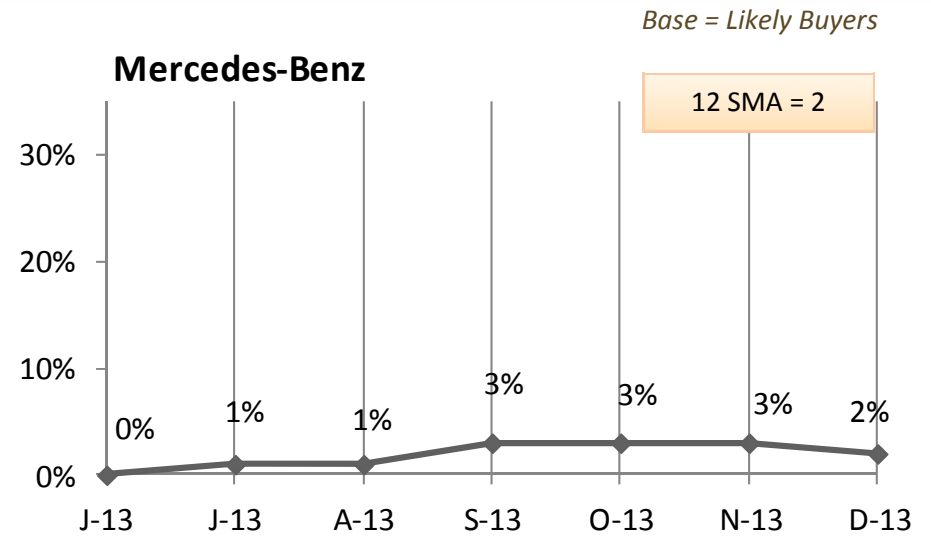
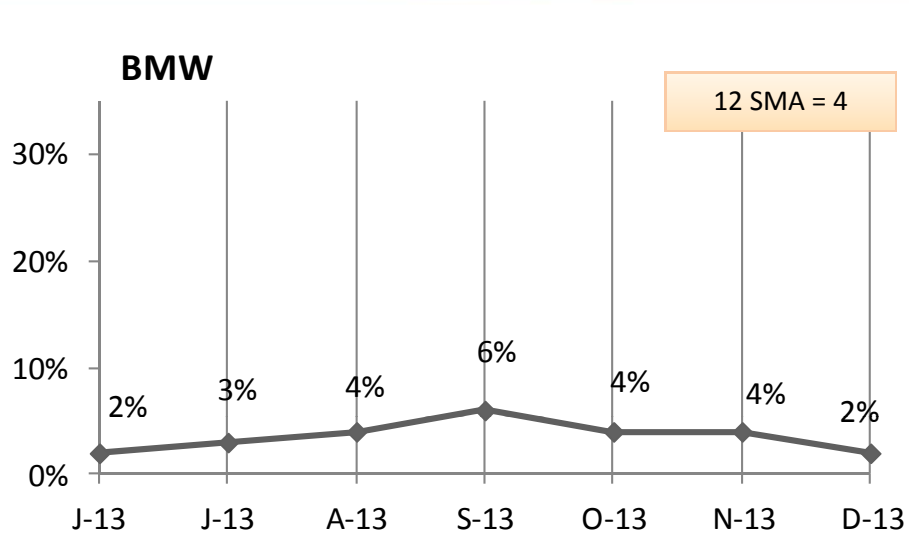




# Brand Preference Over Time 3 SMA (Brands 5-8)



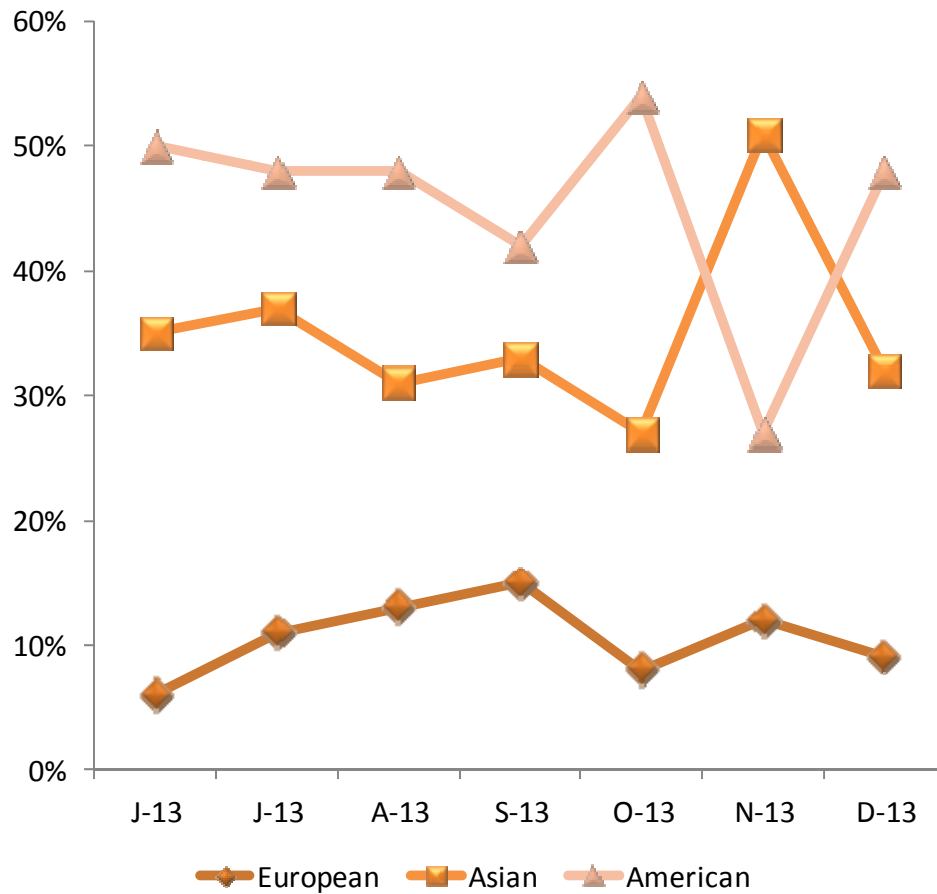
# Brand Preference Over Time 3 SMA (Brands 9-10)



# By Vehicle Origin

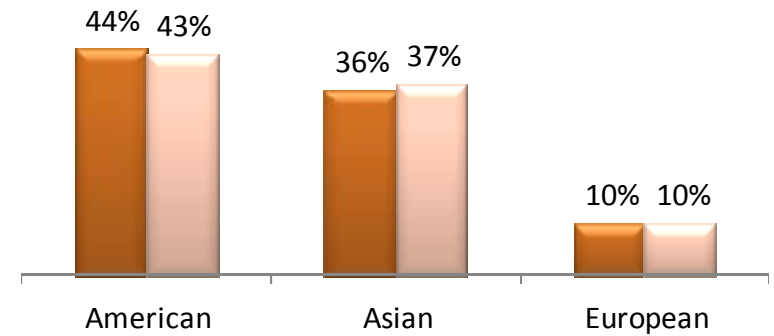
December 2013

Base = Likely Buyers



## Likely to Purchase by Origin

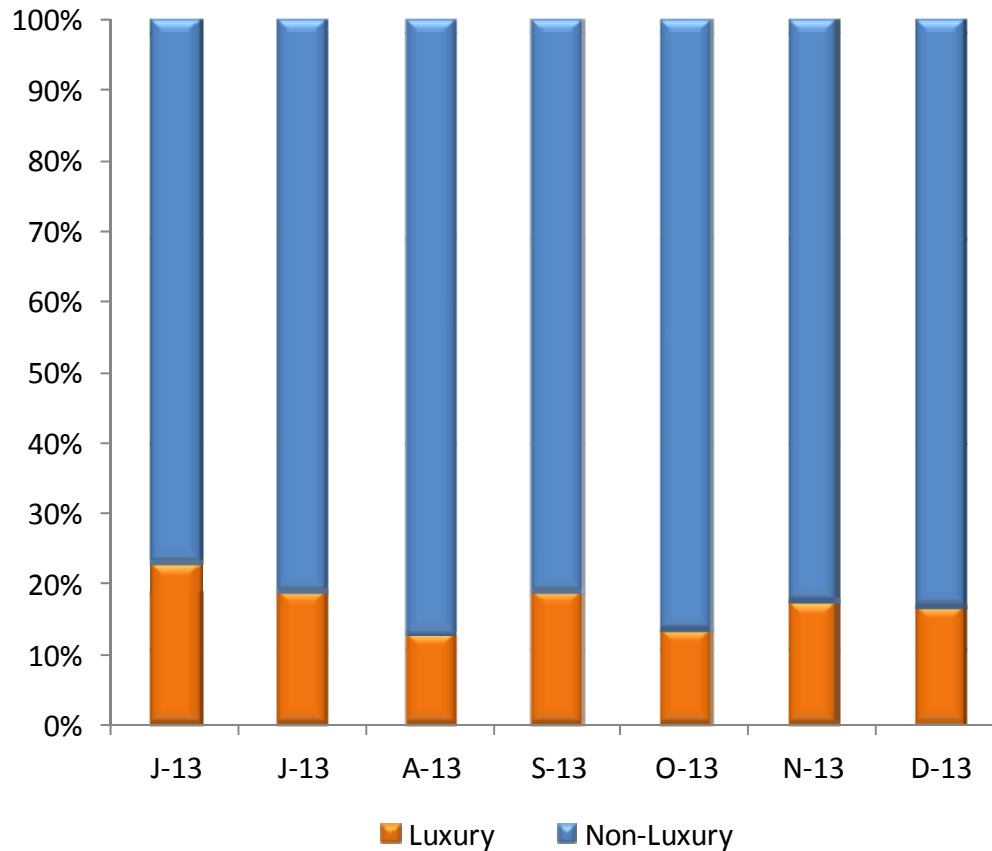
■ 12 Month Average ■ 3 Month Average



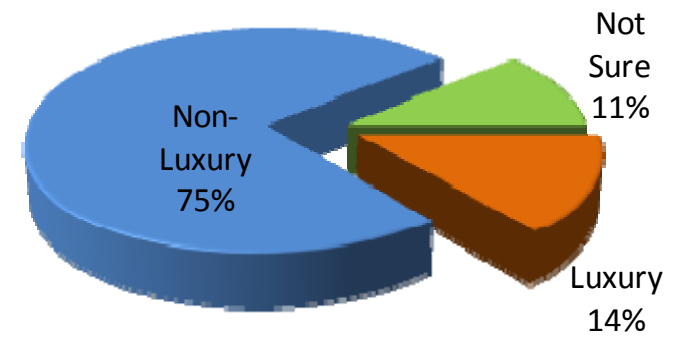
# Luxury vs. Non-Luxury

December 2013

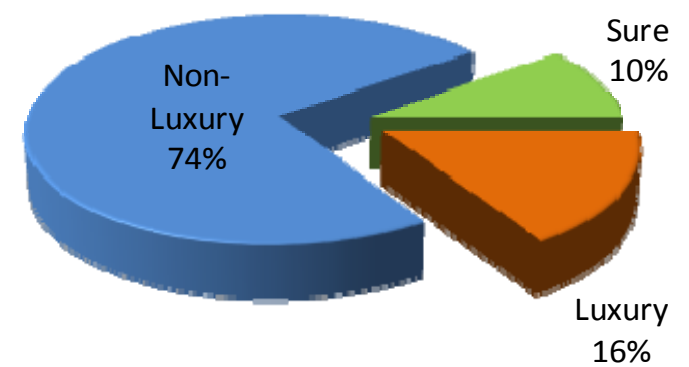
Base = Likely Buyers



3 Month Average



12 Month Average



Q. If you were to buy a vehicle today, what brand would you buy?

# Conclusions

- The Auto Demand Index level for December registered at 82, a slight decline of two points from last month's score. The high point for the ADI in 2013 was August's reading of 86.
- Momentum for the ADI, after slowing down slightly in November, has picked up again this month. Both the 3 month and 6 month moving averages increased in December.
- Among demographics, consumers with household incomes greater than \$100,000 recorded the greatest increase in intention to acquire a new vehicle. Unmarried and Southern car owners also saw a sharp rise in purchase demand, while those with household incomes between \$30,000 and \$50,000 experienced the greatest decline, over the past three months.
- This month, consumers who said they were likely to purchase a vehicle within the next six months remained unchanged from November, at 14%. Demand for mid-size cars showed the most growth, while preference for compact vehicles dropped sharply.
- Ford continues to be the brand that is most frequently named by those intending to acquire a new vehicle, followed by Toyota and Honda. Additionally, BMW and Mercedes-Benz entered the top ten this month.

## **V. Appendix**

**A. Correlation Between ADI and U.S. Auto Sales**

**B. Gas Prices To ADI Correlation**

# Correlation Between ADI and U.S. Auto Sales

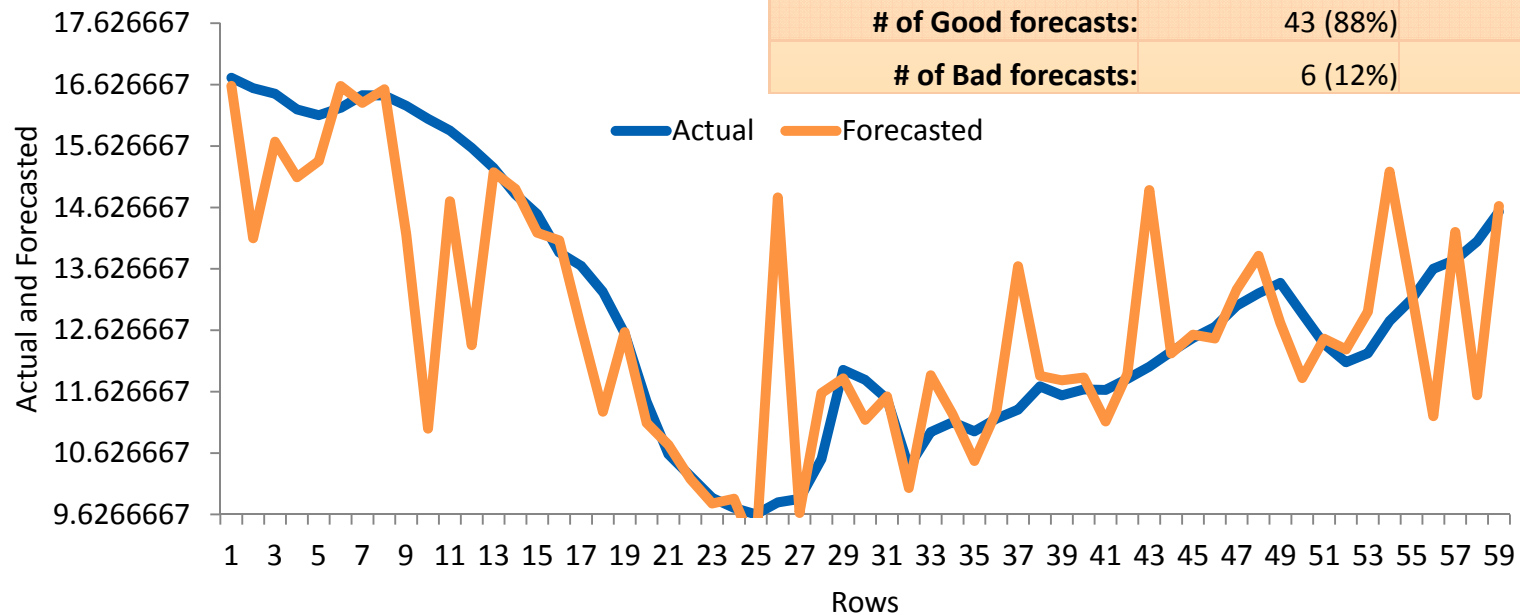
ADI and U.S. Car sales have strong correlation.

$R^2$ : 0.5472

Correlation: 0.7606

## Summary

	Training set	Test set
# of rows:	49	10
CCR:	n/a	n/a
Average AE:	0.65287	1.7668947
Average MSE:	1.4180596	4.8434803
Tolerance type:	Relative	Relative
Tolerance:	10%	30%
# of Good forecasts:	43 (88%)	9 (90%)
# of Bad forecasts:	6 (12%)	1 (10%)



Generated with Alyuda Forecaster XL

# Adding Gas Prices To ADI Provides Nearly Perfect Sales Correlation

3SMA Sales predicted using 3SMA-ADI & 3SMA Gas Prices

R<sup>2</sup>: 0.7678

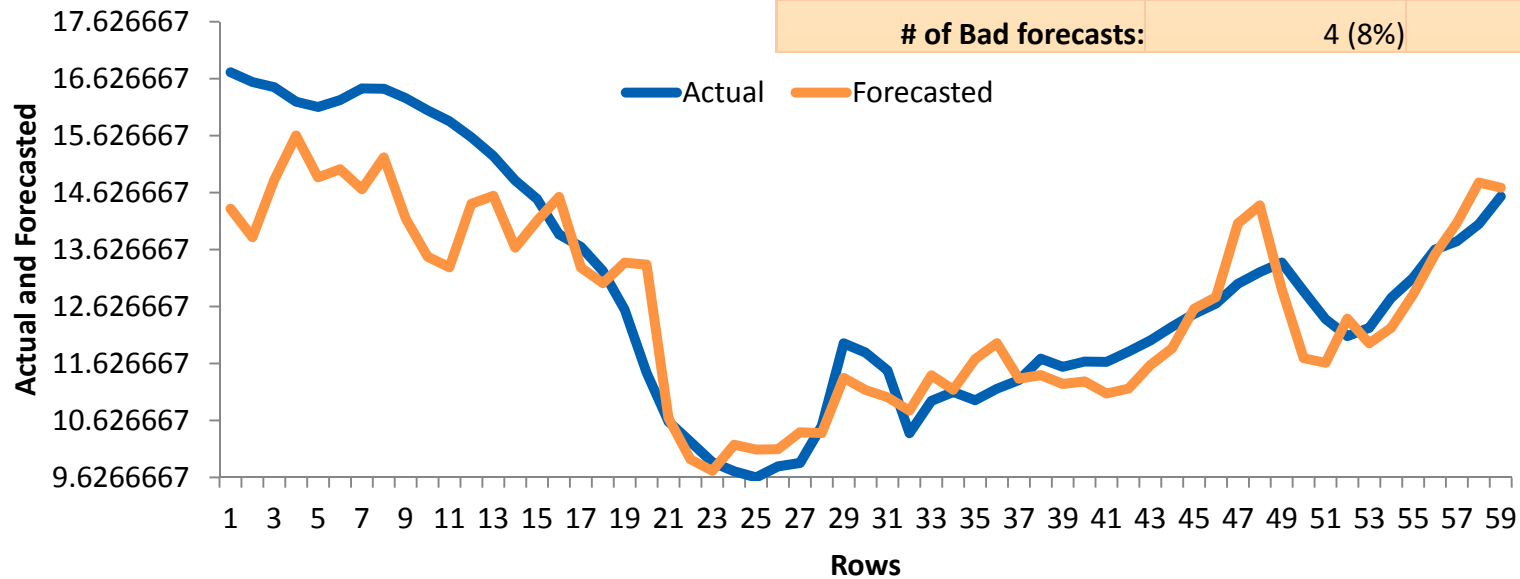
Correlation: 0.9027

## Summary

	Training set	Test set
# of rows:	49	10
CCR:	n/a	n/a
Average AE:	0.6794808	1.1211821
Average MSE:	0.8182215	2.0367258
Tolerance type:	Relative	Relative
Tolerance:	10%	30%
# of Good forecasts:	45 (92%)	10 (100%)
# of Bad forecasts:	4 (8%)	0 (0%)

## Input Importance Table

Input	Value, %
3SMA -ADI	63.5%
3SMA Gas Prices	36.5%



Gas Prices from Bureau of Economic Analysis  
Regression using Alyuda Forecaster XL



# Contact Information

To request a full data set or for any questions, please contact us.

Contact: Raghavan Mayur  
Address: 70 Hilltop Road, Suite 1001  
Ramsey, NJ 07446  
Phone: 800-328-TECH (8324)  
201-986-1288  
Fax: 201-986-0119  
Email: [mayur@technometrica.com](mailto:mayur@technometrica.com)  
Web: [www.technometrica.com](http://www.technometrica.com)