



## INSIGHTS INTO FUEL PURCHASING PREFERENCES

## 1.0 INTRODUCTION

KSS Fuels was asked by the National Association of Convenience Stores (NACS) to analyze and comment on research, conducted on their behalf, into consumer fuel purchasing habits in North America. The original research, described in the 2007 NACS Consumer Fuels Report, together with KSS Fuels' commentary was presented at the NACS State of the Industry (SOI) event and this white paper summarizes the findings.

The goal of KSS Fuels analysis was to identify whether actual consumer buying behavior matched the way consumers said they would buy when presented with certain choices regarding fuel purchases.

KSS Fuels Consultants and Research Scientists conducted the analysis, compiled the findings and presented them at the SOI event.

## 2.0 NACS CONSUMER FUELS REPORT

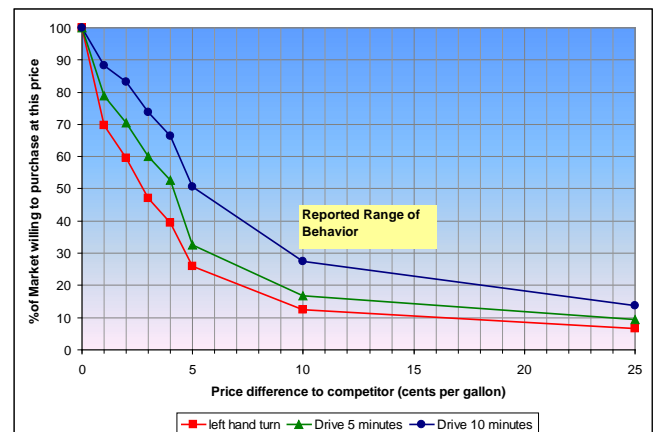
The survey was intended to uncover stated preferences among a representative sample of consumers regarding their response to different fuel price options. It was constructed in such a way as to discern how consumers make choices when it comes to fuel purchasing, by presenting scenarios and asking respondents to comment on the choices they would make. One of the key scenarios for establishing stated price sensitivity involved three (3) different ways to get a lower price at a competing gas station as follows:

1. Switch to a competitor by taking a left turn across a busy street
2. Switch to a competitor 5 minutes drive out of the way
3. Switch to a competitor 10 minutes drive out of the way

This scenario was then extended by offering progressively greater savings, expressed in cents per gallon, to explore the relative attractiveness of each option (in other words as the potential savings increased, how many more respondents would choose to take-up the option in question).

## 3.0 SURVEY RESULTS

The responses were analyzed to explore stated consumer price sensitivity. The following graph summarizes the stated responses to the 3 purchase options outlined above:



The left-hand vertical axis displays the percentage of respondents who choose to continue to purchase at the current price and not take advantage of the competitor price.

From the graph we see consistent responses to the 3 options across a wide range of potential savings, which gives a level of assurance that the results are meaningful.

We can clearly see that US consumers are willing to accept small inconveniences to take advantage of relatively small price savings, such as making a left turn across a busy street, but are less willing to accept major inconveniences such as driving 10 minutes out of their way. The results also indicate that, beyond a 5 cent

per gallon saving threshold, the number of consumers prepared to accept major inconveniences reduces significantly.

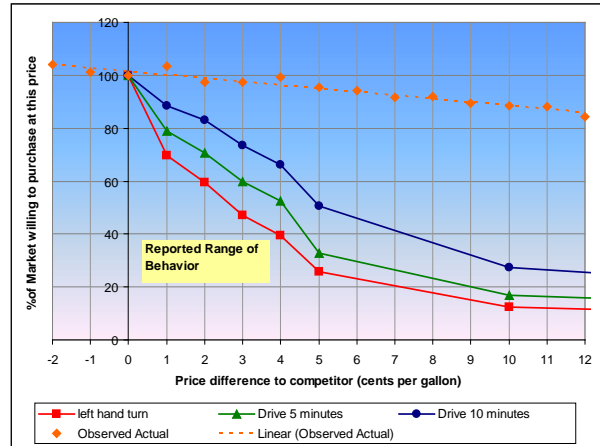
Over half of the respondents (53%) stated they would make a left turn across a busy street if it could save them 3 cents per gallon. Two-thirds (66%) of respondents stated they would drive 5 minutes out of their way if they could make a 5 cent per gallon saving. However only 11% would drive 10 minutes for a 1 cent per gallon saving and 25% would do it for a 3 cent per gallon saving.

The survey clearly demonstrates a significant degree of price sensitivity to the difference between own and competitor prices, even when faced with inconveniences in order to benefit from the price saving. However it is worth noting that not all choices are rational. For example, when considering the additional drive time choice, depending on the fuel economy of a respondents' vehicle a 10 minute extra drive could cost as much as 60 cents more in fuel alone, which makes a 3 cent per gallon saving look very unfavorable. This demonstrates a disconnect between perceived savings (or price sensitivity) and real economic benefit, suggesting that the purchase choices individuals make are not necessarily always rational ones.

## 4.0 HOW SENSITIVE CONSUMERS ARE IN REALITY? PRICE ARE IN

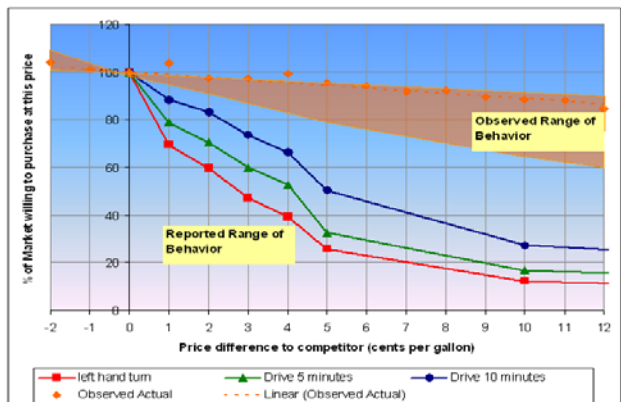
KSS Fuels work with customers in more than 14 countries, representing fuel sales at over 21,000 locations in very diverse fuels retailing markets. In each case we analyze price sensitivity, by site by grade, as the basis for developing more effective, location-based pricing strategies and tactics, and for applying advanced pricing techniques such as price optimization. We

are therefore in a position to apply our experience and a comprehensive dataset to overlay the previous graph with actual price sensitivity data, as experienced by fuels retailers in North America, in order to compare the **stated** price sensitivity (based on the survey) with **actual/observed** price sensitivity (based on data). For this comparison we focused on a price difference of 1 to 12 cents with the lowest priced competitor.



The chart below takes the stated survey responses and adds a fourth line representing the actual or observed price sensitivity, derived from the analysis of actual price and sales data.

The graph clearly shows that consumers are much **less** price sensitive in practice than they report in the survey. The analysis also highlights that the sensitivity to increasing competitor price differences is less pronounced than consumers reported in the survey, i.e. in practice fewer consumers respond to higher price differences than they state. We took the analysis a step further by looking at spreads of actual/observed behavior for each given price point as follows.



and the routes consumers regularly use as they go about their daily business.

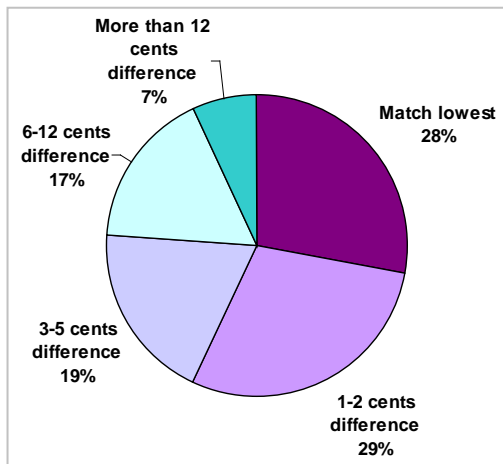
We now see that although the range of actual/observed price sensitivity is broader for each price point, it is still significantly less than that reported in the survey.

We therefore conclude that consumers actual, or observed, purchasing behavior is very different from the behavior they state they would take under the same conditions.

### **ARE THESE DIFFERENCES BETWEEN ACTUAL AND STATED BEHAVIOR UNIFORM ACROSS ALL LOCATIONS?**

KSS wanted to take the analysis a step further by looking at a micro-market level to establish if the differences between actual and stated purchasing behavior vary by location. A micro-market is defined as a single gas station location together with its immediate competitors and is consistent with how a consumer observes and interprets local market prices.

Our findings indicated that consumer decisions depend on the unique



characteristics of individual locations, including such factors as traffic patterns

For any given micro-market there will be a relatively small set of gas stations that represent the majority of consumer choices, typically between 4 and 7, where price has high visibility and is frequently surveyed by the majority of consumers.

So how frequently does price vary at the micro-market level? The following pie chart represents a snapshot of a number of micro-markets, indicating their relative price position to competitor prices in their locality.

The pie chart indicates a relatively broad variation in price across competing locations. Although nearly 1/3<sup>rd</sup> of the micro-markets exhibit no price difference with competitors, the majority of them exhibit price differences of anywhere up to 12 cents per gallon with nearly half of them (45%) showing price differences of 3 cents or more. With gross margins around 10 cents per gallon, these represent very significant variations and for some micro-markets this could mean the difference between profitability, break-even or worse.

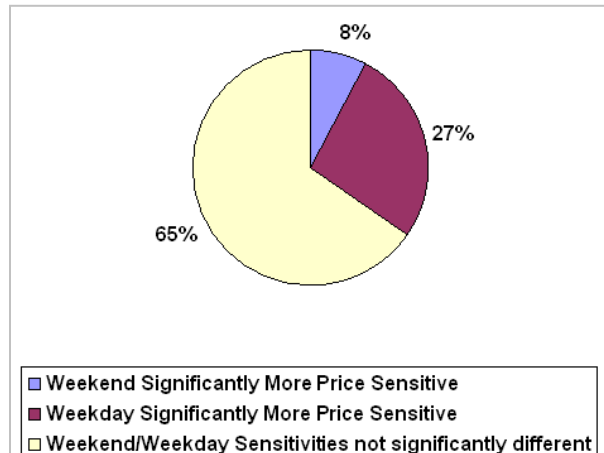
This provides compelling evidence for understanding the actual price sensitivity and price-positioning limitations versus competitor locations for each and every micro-market.

### **WHAT DOES THIS MEAN IN PRACTICE?**

Understanding price sensitivities at a micro-market level is crucial. Some micro-markets will exhibit significantly greater price sensitivity than others (price has a greater impact on sales volumes) and hence poor price decisions at those locations will have a much more severe effect on margin, volume and profitability than others. Broad-brush pricing strategies are typical and although they minimize the risks of making poor price decisions, they also hide errors and mask opportunities.

The relative differences in micro-market sensitivity present good opportunities to adjust pricing tactics to the unique characteristics of each location provided you have the processes and systems to support such an approach.

These opportunities are magnified if we look even further into how price sensitivity varies by day of week:



The pie chart illustrates that approximately 1/3<sup>rd</sup> (33%) of a given set of sites exhibit significant differences in price sensitivity between weekdays and weekends.

This could be caused by a number of factors, including the possibility that consumers have more time at the weekends to consider where they purchase, suggesting that they may choose a different competitor at the weekend, when they have time to travel there, than during the week when they have less time. In other words you may be faced with a different competitor(s) at the weekend than during weekdays.

This “day-of-week” factor is another opportunity to fine-tune pricing strategies and tactics to deliver more competitive prices that reflect repeatable and measurable changes in consumer purchasing behavior. Another location-specific factor worth considering is the relative price sensitivity

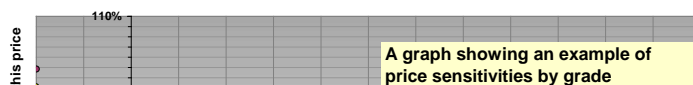
of individual fuel grades. The following chart uses actual price and sales data to illustrate individual grade price sensitivity at one specific location:

The graph confirms regular unleaded as the most price-sensitive and premium unleaded the least price-sensitive. It also indicates how individual grade price sensitivity changes in comparison to competitor prices for the same grade, confirming that the higher the price difference at a competitor location the more likely consumers will choose the competitor site. This analysis questions the use of fixed grade spreads, where mid-grade and premium-grade fuels are priced based on a fixed difference to the regular grade. There is an opportunity, by location, to consider how changing the price spread between grades might incentivize consumers to consider switching to the premium grades, which might attract higher margins than regular.

**WHY DON'T CONSUMERS ACTIONS MATCH THEIR WORDS?**

There are a number of possible explanations as to why consumers actually behave differently to the way they say they'd behave, as follows:

- Incomplete information – at the time of purchase the consumer may not have complete information about all relevant competitor prices in the area



- High price volatility – the consumer can never retain accurate, up-to-date information for long or they feel compelled to make a quick decision because prices may change again while they wait to assess all possible options
- Factors other than price – may have a stronger influence than consumers will readily acknowledge, for example:
  - Time – in practice people place greater value on their time than they have stated....convenience is a valuable commodity
- Motive – the survey respondent will very likely desire lower prices and so is motivated to emphasize the importance of price

## 5.0 CONCLUSIONS

The actual behavior of consumers when faced with decisions on where to buy gasoline is shown to be significantly different to their stated behavior, and this is consistently true under a range of potential purchase scenarios. This in itself suggests that when it comes down to making purchasing decisions, the reasoning behind those decisions can only be reliably understood by analyzing the actual transaction data.

What does this mean for gasoline retailers? That potential anecdotal evidence as to why consumers buy has to be treated very carefully and cannot be relied upon when thinking about pricing tactics and strategy. It highlights a need to base any decisions regarding pricing strategy on the analysis of observed behavior, by applying appropriate analytical processes and tools to real sales data.

The analysis also shows that consumer purchasing behavior varies by site and requires a deeper understanding of the

structure and dynamics of individual micro-markets in order to fine-tune pricing tactics to reflect their unique characteristics. Adopting broad-brush pricing tactics that ignore local micro-market differences ignores significant opportunities for incremental volume or margin growth.

We have also shown that price sensitivity varies between gasoline grades and by day of the week. Most gasoline retailers today either don't recognize the degree of variation as being significant or cannot support pricing tactics that reflect these variations. These are missed opportunities that cannot be ignored, particularly in today's environment of high prices, volatile costs and squeezed margins.

## 6.0 RECOMMENDATIONS

Fuels retailing markets have faced more changes and challenges in the past twelve months than they've seen in ten years or more. Adopting last years' pricing strategies and tactics will not deliver desired results and change is needed.

This white paper highlights in clear terms that the only reliable basis for defining and applying more effective pricing strategies is to investigate and analyze data. Market research and anecdotal evidence from consumers may hide the true rationale behind their purchasing decisions and cannot therefore be relied upon for something as critical as pricing strategy and competitive price position.

KSS Fuels therefore recommend that gasoline retailers undertake a thorough review of their existing pricing strategies and tactics and, in parallel, conduct detailed analysis of their existing sales data as the basis for determining any changes. We further recommend that this analysis incorporates the identification and modeling of micro-markets and, within these local markets, analysis of price sensitivity variation by fuel grade and by

day of week, to judge if sufficient opportunity exists to exploit these variations.

KSS Fuels has a proven methodology to guide retailers through this process, known as a Strategic Pricing Diagnostic.

While a strategic review is underway, KSS Fuels recommends an operational review to determine if the pricing business processes and supporting tools are “fit for purpose” to apply, monitor and adapt a revised pricing strategy.

## **ABOUT KSS FUELS**

KSS Fuels is the leading global provider of pricing software, analytics and consulting services to fuel retailers and wholesalers in the oil & gas, convenience store, grocery and retail industries. Providing “Knowledge beyond the numbers,” KSS Fuels helps fuel marketers and distributors implement effective pricing solutions and increase profitability through the use of knowledge and numbers. The company’s US headquarters are located in Florham Park, New Jersey, and its international headquarters are based in Manchester, United Kingdom. For more information about KSS Fuels, please visit [www.kssfuels.com](http://www.kssfuels.com).

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