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# Popular money-saving strategies prove elusive for low-income households

*Shaun Carter*

What's something that every household in America purchases, without fail, each year? Toilet paper. And lots of it. Americans use more than 17 billion rolls of toilet paper annually! In "Frugality is hard to afford," (University of Michigan, Ross School of Business, Working Paper No. 1309, March 2016), A. Yesim Orhun and Mike Palazzolo set out to discover the effect income level has on purchasing behavior as it relates to, arguably the most important household commodity, toilet paper.

The authors investigated how sale pricing, bulk discounts, and liquidity constraints affect the quantity and frequency of toilet paper purchases by different income groups. Because toilet paper is a commodity that is purchased by nearly everyone, is nonperishable, has no close substitute, has consistent consumption patterns, and is regularly discounted by retailers, it offers a great unit of analysis for studying the effect a household's cash liquidity has on its ability to take advantage of sales and discounts.

It stands to reason that when a commodity that is regularly consumed by a household goes on sale, the household will purchase more of it to "stock up" at this lower price in preparation for future use. But what about those who live paycheck to paycheck and may not have the ability to stockpile toilet paper during a great sale?

In this study, the toilet paper purchases of more than 100,000 households were analyzed over a 7-year period. The researchers identified differences in the purchase decisions of households in five different income levels: less than $20,000 per year, $20,000–40,000 per year, $40,000–60,000 per year, $60,000–100,000 per year, and more than $100,000 per year. The authors go on to examine bulk purchasing and accelerating purchases in response to sales amongst the five groups, as well as the potential financial impact of those behaviors. The authors conclude with a discussion of how the income groups, particularly those at the lowest levels, are impacted financially by their varying ability to employ money-saving strategies for purchasing toilet paper.

The researchers discovered that high-income households were most likely to utilize money-saving strategies, such as buying in bulk and accelerating purchases in response to sales. The lowest income group was least likely to employ such purchase behaviors despite being the group that would stand to benefit the most from taking advantage of these intertemporal money-saving strategies. Overall, the lowest income group spent the least on toilet paper by making use of a different strategy—purchasing cheaper brands. Still, considering that the discount for buying in bulk (defined as a package size greater than four rolls) ranges from 8.4 percent for 6-roll packages to 44.2 percent for 36-roll packages, why would these low-income households forego bulk purchases? A lack of available financial liquidity is one theory.

The authors found that liquidity constraints and the timing of sales disproportionately govern the purchase behavior of low-income households, even for relatively low-priced products. By comparing the household purchases made during the first week of the month with the remaining weeks, the researchers determined that the purchasing behavior of higher income households did not vary as much as that of lower income households. The lowest income households were more likely to purchase toilet paper on sale during the first week of the month, when they were most likely to have received paychecks and supplemental financial assistance, than during the later weeks in the month, when those sources of income were most likely diminished. Ultimately, this inability of lower income households to accelerate their purchases to take advantage of sales throughout the month and a lack of financial liquidity to stock up by buying in bulk means that they spend an additional 6 percent per standardized roll of toilet paper than their higher income counterparts. The authors posited that this information might help retailers that serve low-income communities determine when best to schedule temporary sales and help policymakers focus on ways to provide liquidity relief to low-income households.