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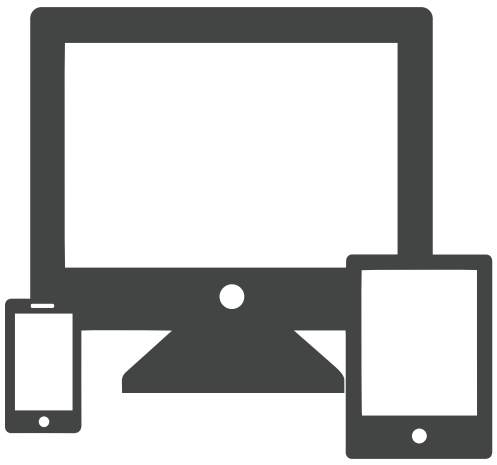

Shopping on the Go

How mobile usage affects customer purchase behaviors

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THE PROJECT

Smartphone penetration among American adults has reached 68 percent as of January 2014, according to Nielsen's data. Nearly 80 percent have a desktop or laptop, and more than 40 percent have a tablet computer, according to Pew research.

For brands, the potential for mobile revenue is immense.

Deloitte Consulting in 2012 predicted that $31 billion worth of retail revenues will be transacted using mobile devices by 2015. And Google Research in 2013 reported that in addition to actual purchases, customers used their mobile devices for pre-shopping activities such as finding directions, store hours, and product information and reviews. Google Research also reported that customers who used mobile devices frequently for shopping related activities spent more increasing their basket sizes across categories such as household care (increased basket size 25 percent), electronics (34 percent), appliances (40 percent) and health and beauty (50 percent). (How Mobile is Transforming the Shopping Experience in Stores, Google Research, May 2013)

As mobile devices, including the rapidly growing wearables space, become increasingly integrated into people's lives, they offer an opportunity for brands to be more relevantly woven into people's lives.

Despite the tremendous potential of mobile, empirical evidence about how mobile shopping and buying changes a consumer's behavior, and their value to a brand has not been available.

What is the financial impact on customer's engagement with a brand while using a mobile device, as well as other platforms?

Specifically, how does mobile shopping change purchase behaviors?

To answer these questions with evidence, we investigated these hypotheses:

1. **Larger orders**
   As customers adopt the use of a mobile device, order sizes will increase. Relatedly, as mobile use decreases (i.e. as customers disengage from the app), customers will place smaller orders than before.

2. **Greater Frequency**
   As mobile frequency increases, the likelihood of purchase increases. Likewise, as mobile frequency decreases (i.e. as customers disengage from the app) the likelihood of purchase decreases.

3. **Greater Velocity**
   As mobile frequency increases, the time to next order becomes shorter. Relatedly, as frequency declines on mobile, the time to the next order becomes longer. And, orders made with one or more mobile device types will lead to the next order sooner than PC-only orders.

4. **Smartphones for simple shopping**
   Orders composed, modified and purchased using smartphones only will be the smallest size orders.

5. **Multi platform customers are of greatest value**
   And, orders composed using multiple devices will be larger than single-device orders.

6. **Customers buy different items on mobile.**
   Because of small screen size, and the difficulty on searching for and researching products on mobile, customers buy habitual products on mobile instead of products that require consideration.

DATA

The primary project sponsor was Peapod, an online grocer which is part of the Ahold retail chain. Additional participation came from Coca Cola, Reckitt Benkeiser and Con-Agra. Peapod customers can compose, modify and purchase their grocery order online, and groceries are then delivered to their homes. Peapod, which was launched in 1989, operates in 24 U.S. markets. The dataset we analyzed included customer interactions and purchases from July 2011 to June 2013. Peapod provided us with session-level data, which shows what devices were used to compose the order. For orders placed after June 2012, we had SKU data, which shows what items are in an order.

Peapod launched a campaign to promote its mobile app in October 2012. We isolated pre-mobile transactions into a pre-campaign period when everyone was a desktop-only shopper and similarly isolated the post-campaign period when mobile shopping and buying was enabled. This allowed us to create a control group of desktop-only shoppers and an experimental group of multi-device shoppers. We used a matching technique to ensure accuracy of our results.

We limited our sample to customers who had placed at least two orders and at least one order between June 2012 and October 2012, immediately prior to the mobile app campaign launch. Our final sample size was 2,993 mobile shoppers and 12,043 desktop-only shoppers.

THE RESULTS

Mobile is growing

We found that the trend toward mobile shopping is strong. In particular, we note the strong upward trajectory of phone-only and tablet-only orders. (See Figure 1.) Phone-only orders increased from 3 percent to 7 percent over the two-year timeframe of our study. Tablet-only orders increased from roughly 4 percent to 9 percent over the same time period. By contrast, the percentage of desktop-only orders decreased from more than 80 percent of all orders in July 2011 to 60 percent in June 2013. (See Figure 2.)

Figure 1: Trends toward mobile shopping

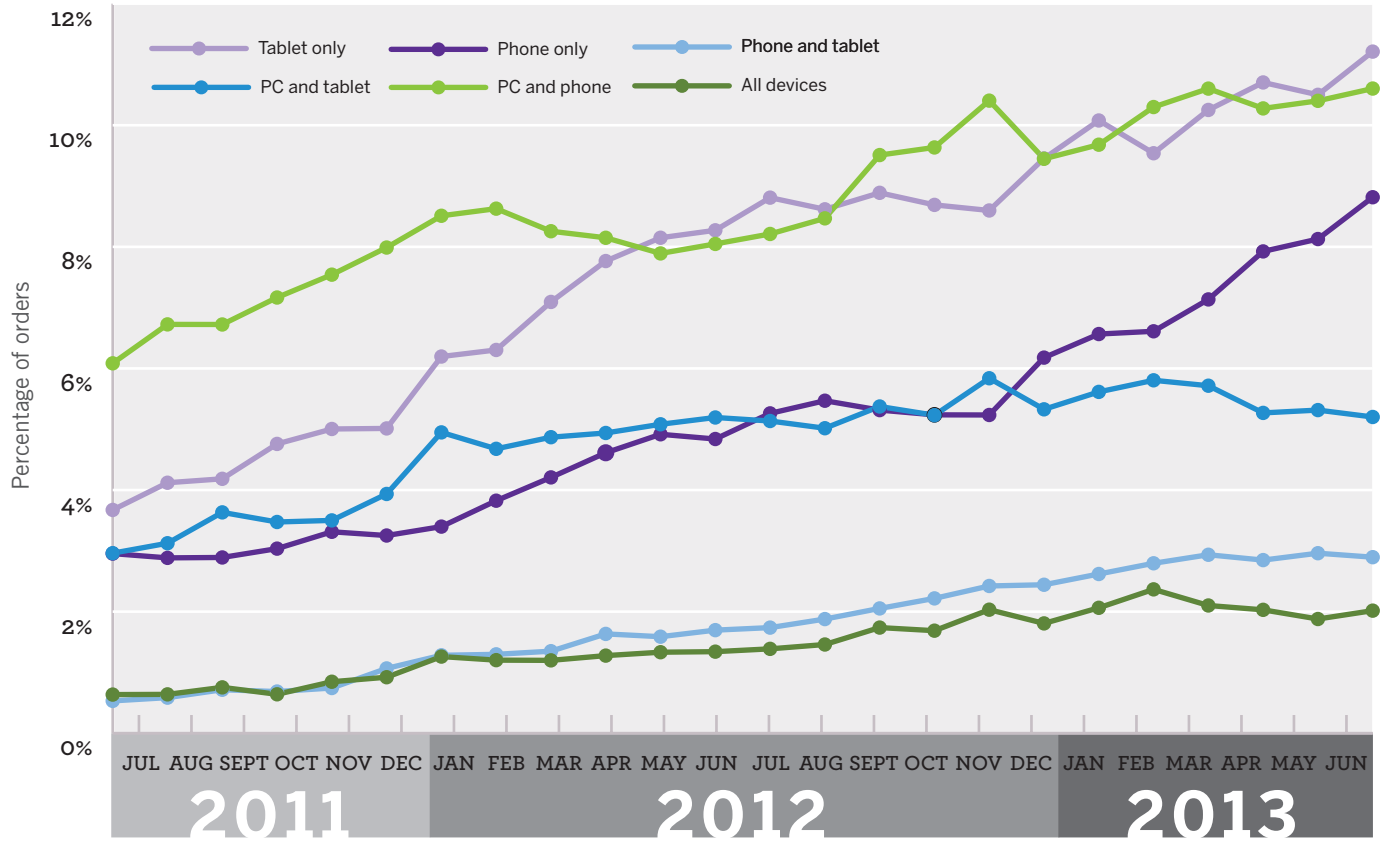

Figure 1: Percentage of mobile orders by device type

Figure 2: Percentage of PC-only orders declining

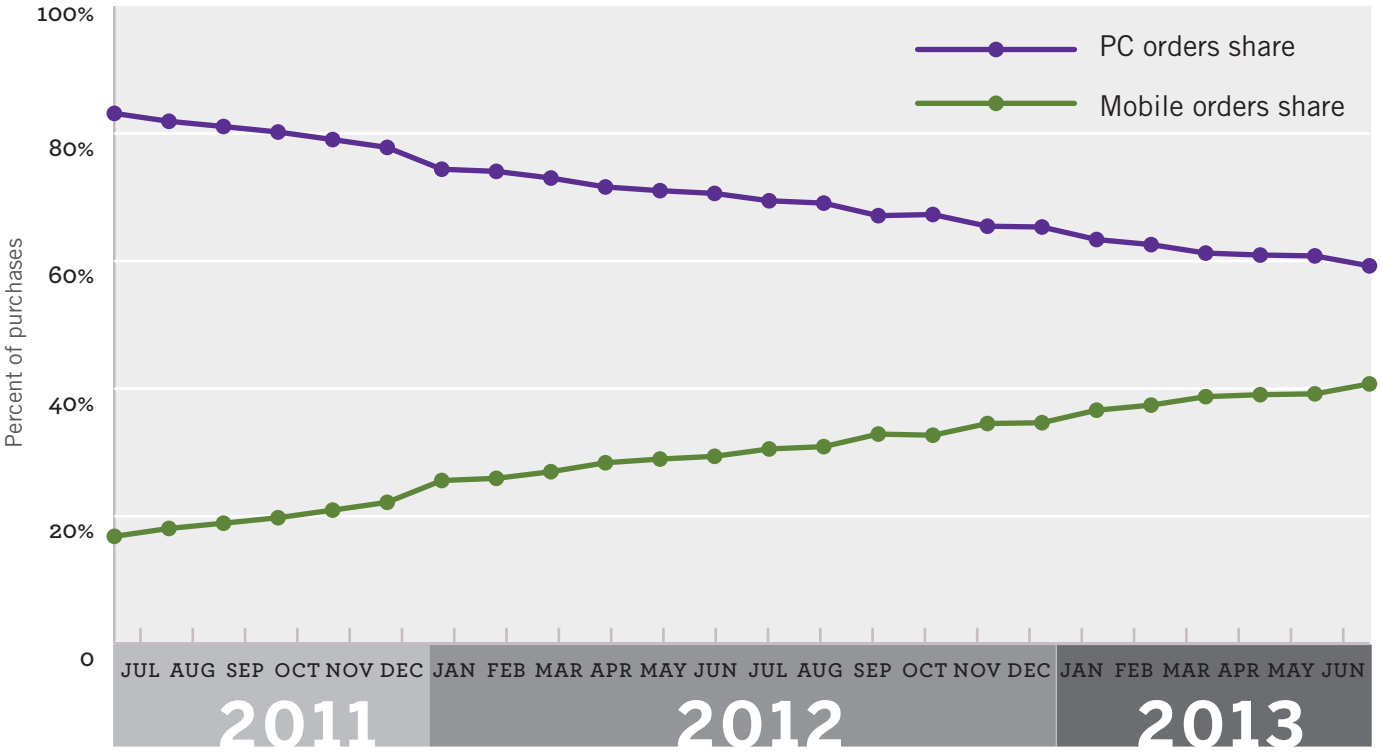

Figure 2: Percentage of PC and mobile orders

Spiegel Insight: Mobile adoption grows purchase behavior.

The more times a customer used a mobile device to compose or place an order,

- the larger their orders were (the converse wasn't necessarily true in that the less frequent shopping decreased order sizes).

AND

- the more likely they are to place subsequent orders

In addition, orders made with one or more mobile devices have shorter time-to-next-order than PC-only orders. While smartphone-only orders have the shortest time-to-next purchase (on average 18 percent less than PC-only orders) they are the are also the smallest (on average 3 percent less than PC-only orders. Figure 3 shows the time-to-next purchase on various device types. Orders made with multiple devices, on the other hand are the largest (5 percent larger than PC-only orders), and their time-to-next purchase is 16 percent less than PC-only orders.

Spiegel Insight: Multi-device customers are most valuable

We found that customers who use multiple devices to build an order, make larger orders. Even though smartphone-only shoppers purchase more frequently, the fact that multi-device customers make larger orders makes multi-device customers more valuable.

Orders made with two device types have larger order size than PC-only, smartphone-only, or tablet-only orders. (See Figure 4.) Smartphone-only orders, in particular, are the smallest, which is logical given the constraints of the small screen size.

Figure 3: Mobile purchase frequency

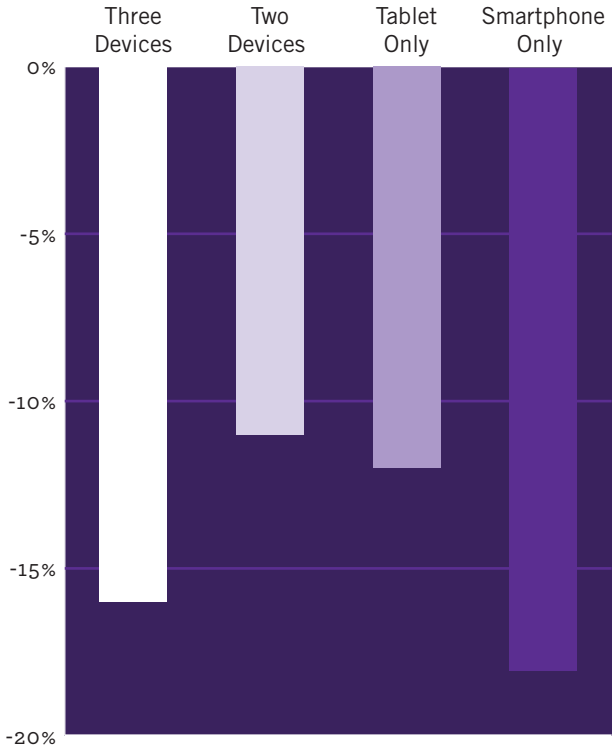

Figure 3. Time-to-next order on various device types as compared to PC-only

Figure 4: Mobile order sizes

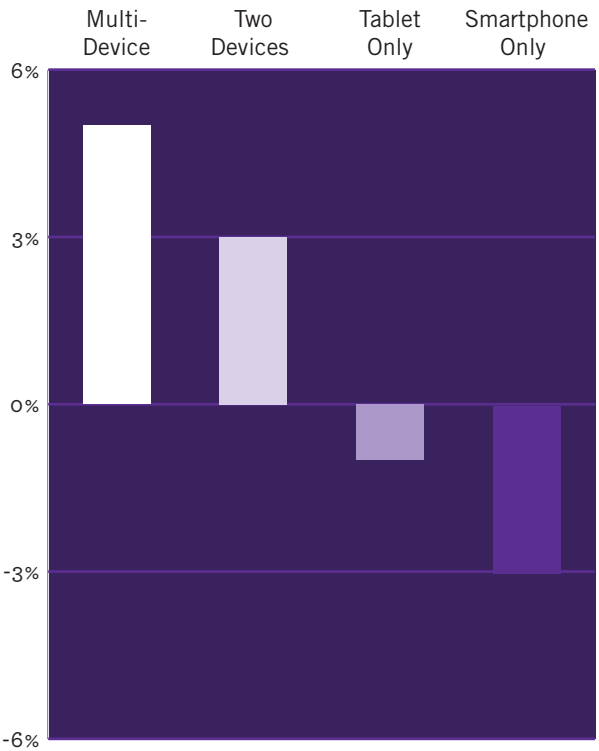

Figure 4. Size of orders made on various device types as compared to PC-only

Spiegel Insight: Consumers buy habitual products on mobile and considered products on desktop.

In our calculations we used two variables to describe habitually purchased products: 1) the number of past purchases a customer has made for a given item; 2) how prominent the manufacturer is in the product category (e.g., Coca-Cola has a huge presence, so customers feel comfortable purchasing it on mobile.)

Both of these variables showed that as customers shop on mobile they tend to purchase habitual products. Products such as fruit, vegetables, baby food and formula require little to no research and are easily re-purchased on a mobile device.

Figure 5 shows that people who bought fruit using a mobile device had purchased it an average of 9.6 times previously. In addition, they have purchased an average of 75.7 fruits previously. The high number of re-purchase instances indicates how "habitual" a product is. So on Peapod, fruit is a highly mobile and habitual product. The rankings here also control for customer demographics, their purchase behaviors, and manufacturer presence.

Figure 5: Most mobile-shopped categories

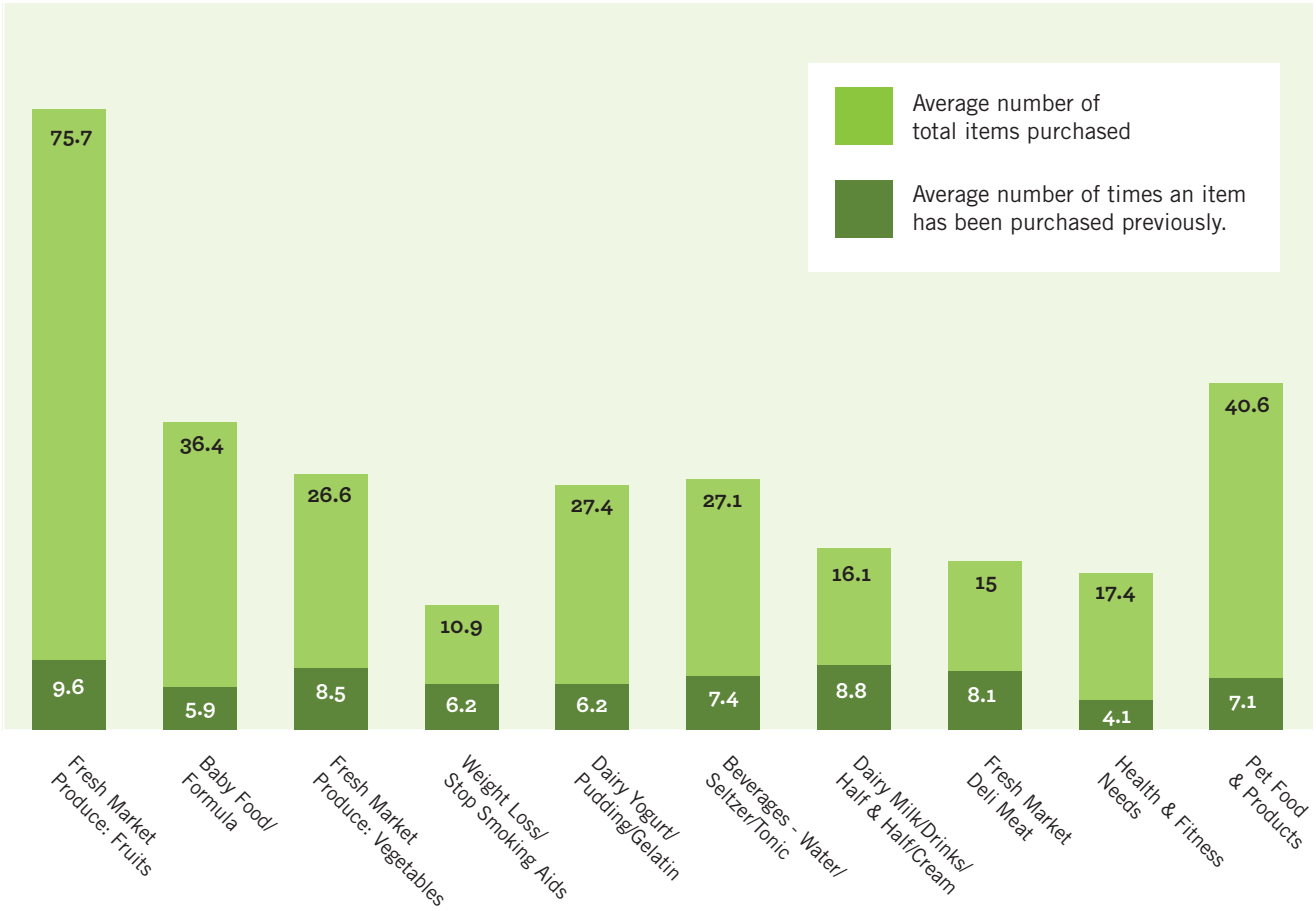

Figure 5. Includes categories that have at least 10% of household share during June 2012 through June 2013.

Figure 6: Least mobile-shopped categories

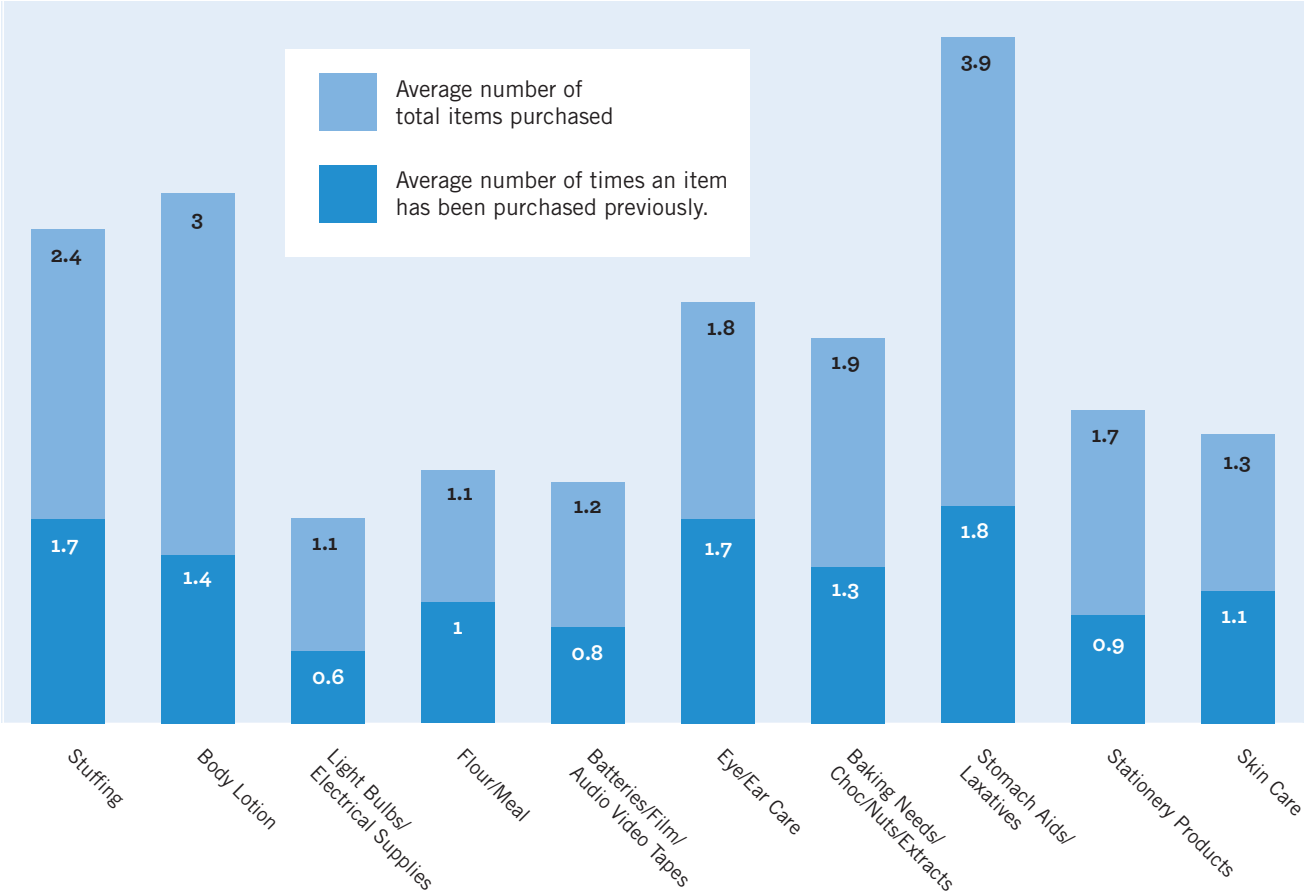

Figure 6. Includes categories that have at least 10% of household share during June 2012 through June 2013.

Figure 6 shows the least mobile-shopped items. For example stuffing mix was purchased on mobile an average of 1.7 times. And shoppers are only buying two or three per year. (An average of 2.4 stuffing mixes were purchased by Peapod shoppers.) So stuffing mix is not frequently purchased on mobile and not habitually purchased.

What do these findings mean for companies?

Our data shows that mobile adoption is a cumulative process that retailers should encourage customers to develop. As customers incorporate mobile shopping, their value increases because they place larger orders and place them more frequently. In addition, we see multi-device engagement as a way to grow customers' purchase behaviors.

Our most significant finding is that consumers purchase different types of products on mobile than they do on desktop. The implications of this finding mean that when launching a new product or one that requires consideration, research or comparison by the customer, the firm should not limit its promotion or communications efforts in mobile. Rather, leverage other channels. That said, if a brand is dominant enough in a category, consumers might extend trust to it, even on a new product. For example,

if Tide launches a new laundry pen, mobile customers might implicitly trust Tide because of its dominance in the laundry category.

Additionally, our finding that multi-channel engagement can increase purchase behavior, could help retailers and brands in planning their mobile marketing strategies. For example a firm could promote its mobile app to customers who have a long interpurchase time.

AREAS FOR FUTURE RESEARCH:

One limitation of this study is that we examine only one dataset from the grocery category. We believe that our findings can be generalized to other categories, but those categories might have different nuances. For example, we know that grocery spending is fairly fixed. By comparison, we know that entertainment and media spending are less fixed, so mobile and multidevice options might encourage impulse purchases.

We believe further in-market studies and customer surveys could enhance our understanding of the mobile market. What product categories are customers purchasing more of as they become accustomed to mobile shopping? What do mobile shoppers buy that traditional or PC-only shoppers are not?

As customers increase their purchase behavior due to mobile adoption, how long can we expect that trend to persist? Do those increased purchases eventually fall off? Does adoption of mobile persist such that over longterm mobile adopters become equal to or of greater value than multiplatform customers?

Future studies will address these questions.