Descriptive and provincial social norm messages on grocery cart placards can be used effectively to increase produce demand without increasing shoppers budgets or decreasing store profitability.

Industry Report on:

**Shopper Marketing Nutrition Interventions: Social Norms on Grocery Carts Increase Produce Spending without Increasing Shopper Budgets**

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In the research summarized in this report, IBECC expert Dr. David Just and his colleagues Dr. Collin Payne and Dr. Mihai Niculescu, from New Mexico State University, and Dr. Michael Kelly from Paso del Norte Health Foundation, set out to test the effectiveness of an innovative shopper nutrition intervention to increase fruit and vegetable spending without increasing shoppers budgets or decreasing store profitability.

*Read on to learn how the studies were conducted, what researchers found, and the key takeaways for your business.*

1. **Rational**

Social norms are powerful influencers of individual choice. In these studies researchers aim at increasing fruit and vegetable spending by using social norms. By describing what and how much fruit and vegetables are normal or appropriate to purchase, the aim at leveraging a powerful in-store marketing intervention, targeted at capturing the portion allocated to impulse purchases or items that one forgot to include in their shopping list (Payne et al., 2014). In addition, given that sustainability for both the shopper and the grocery store is essential in the adoption of an intervention like this, they constitute key components of this research.

2. **Background**

According to a recent USDA report, U.S. consumers currently spend a much larger proportion of their grocery shopping budgets on packaged and processed foods (Guthrie et al., 2013) than on fruits and vegetables, a trend that has only worsened over time (Center for Disease Control and Prevention, CDC, 2014). Given that over 50% of all food expenditures are accounted for by grocery stores, increasing fruit and vegetables purchases in grocery stores could have a significant impact on public health (Just and
Payne, 2009; Payne et al., 2014). However, nutrition intervention research targeting fruits and vegetables in grocery stores is scarce, probably due to concerns of overall efficacy and economic sustainability for both the store and the consumer (Payne and Niculescu, 2012).

3. Research Description

To test this innovative marketing nutrition intervention researchers conducted an initial pilot study in two grocery stores in El Paso, TX and later expanded the intervention to two additional stores in southern New Mexico. To be effective the intervention targeting fruits and vegetables purchase increase was designed to be: salient, easy to interpret, provide shopping benchmarks, grocery store economic sustainability and shopper economic sustainability. Messages fulfilling these attributes were placed on eleven inch wide by eight inch long placards to be displayed in the stores’ shopping carts.

Salient: To increase its saliency the intervention was designed to be noticed throughout the duration of the shopping trip, thus the placards were physically displayed on the inside front (i.e., facing the shopper) and outside front (i.e., facing other shoppers) of all the shopping carts in the store.

Easy to interpret: For ease of interpretation messages were created using fonts known to be easily processed and to generate positive attributes (i.e., Calibri and Arial) along with high contrasting colors to assure clarity (Alter and Oppenheimer, 2009; Wang, 2013). To facilitate interpretation by minimally literate shoppers placards included graphics of popular fruits and vegetables at the particular store, along with the Arabic numeral (Zebian and Ansari, 2012) representing the average number of fruits and vegetables bought by shoppers in that store, which shoppers could use to benchmark their behavior. Finally, given the locations of the intervention (El Paso, TX and southern New Mexico), and to maximize its reach, the message was included in both Spanish and English.

Provide shopping benchmarks: Behavioral interventions like social norms signage allow shoppers to benchmark their own behavior against what is suggested. For this intervention researchers used messaging about the average number of produce items normally purchased per shopping trip as a “descriptive” social norm (Cialdini, et al., 1990; Cialdini, 2003; Reno et al., 1993), and the number of produce items normally purchased at the specific store as a “provincial” social norm (Goldstein et al., 2008). As such, the message on the placards read: “in this store, most people choose at least x produce items” and a list of the top ten fruits and vegetables purchased in the store was included (see Fig. 1). To accurately arrive at these descriptive social norms, researchers used sales data on amount and type of produce purchased at each store. To reduce the likelihood of a boomerang effect, whereby those below the purchasing norm would increase their purchasing but those above it would decrease it, researchers added social approval information (e.g., a smiley icon) to the descriptive norm, as a way of reinforcing existing high purchasing and encouraging low produce purchasing to increase (Schultz et al., 2007).

Grocery store and shopper economic sustainability: Researchers hypothesized that shoppers' budgets are generally fixed when they arrive at the grocery store. Thus, in the idea of attaining shopper economic sustainability the intervention was designed to shift unplanned purchases (~50% of all purchases) (Stilley et al., 2010) to increased purchases of fresh fruits and vegetables, without increasing shoppers grocery shopping budgets. Grocery store sustainability results from the increased sales of fresh fruits and vegetables which typically carry higher profit margins.
How was the pilot study conducted?

The pilot study was conducted in two grocery stores of similar size, owned by the same company, and located approximately nine miles apart on the same road in El Paso, TX in 2012. The stores were selected to have very similar demographics in terms of ethnicity, gender, age, unemployment, and percentage finishing high school. One store was used as a control and no interventions were made in it throughout the treatment period (i.e., no placards were used). In the intervention store, placards with the design and messaging described above (and illustrated in Figure 1) were displayed on the inside front and outside front of all grocery carts in the store (~70 carts), for 14 days.

A total of 396,017 individual person transactions from the two participating stores were aggregated by the retailer by day into sales reports (the unit of analysis for the results reported) and analyzed by the researchers for produce spending, total spending and the proportion of produce spending to total spending. Outliers due to holidays or other unusual events were removed from the database. Researchers obtained 57 days of baseline data (preceding the treatment) and 14 days of treatment data, for both the control and intervention stores.

What did researchers find?

To protect stores’ proprietary information all sales data were transformed through daily customer numbers to report results as percentages (which represent mean dollar value differences or proportion percentage differences), instead of dollar values or proportions. Produce purchasing per person per day data between the control and intervention stores for the baseline period showed a strong correlation, suggesting that any significant departure from the observed produce purchasing trends between the two stores could be attributed to the marketing intervention being tested.

The introduction of placards in the intervention store during the treatment period resulted in a significantly larger difference in average produce spending per day per person between intervention and control stores of +16%, compared to +4% during the baseline period, a strong indication of the effectiveness of the intervention (Figure 2). Further evidence of effectiveness resulted from the difference in the proportion of produce to total spending per day per person between control and intervention stores, which was marginally significantly larger (+8.5%) during the treatment period than during the baseline period (-3.6%) (Figure 3). Conversely, the difference in average total spending per day per person across stores during the treatment period (+6.8%) was not significantly larger than that during the baseline
period (+6.2%). This indicates no change in shoppers budgets between baseline and treatment periods, a desirable result given that the purpose of the intervention is to increase purchases of fresh fruits and vegetables without increasing shoppers budgets.

Figure 2. Pilot Study Results – Texas 2012

Figure 3. Pilot Study Produce Proportion Results – Texas 2012
What do these results mean?

Results from this pilot study suggest that:

- This low-cost, easy-to-implement marketing nutrition intervention was effective at increasing purchases of fruits and vegetables
- It has that effect without increasing shoppers budgets
- It becomes economically sustainable for stores by promoting increased sales of higher margin fresh fruit and vegetables

Given the strong results of the pilot study, researchers decided to expand the placard intervention. Read on to find out what they did and what they found...

Intervention Expansion

The objective of the intervention expansion was to test the placards in two additional locations (to check if the observed effect was generalizable), in two different time periods (as opposed to just one time period in the pilot study) and for a longer period (4 weeks vs. 2 weeks for the pilot study).

How was this study conducted?

The intervention expansion was conducted in 2013 in two additional stores located in Southern New Mexico, owned by the same grocery chain as the stores in the pilot study. Researchers obtained spending data for 252,115 (store #1) and 323,574 (store #2) individual person transactions aggregated by day. As with the pilot study, outliers due to holidays or other unusual events were removed from the database. Baseline period was 77 days for store #1 and 103 days for store #2. The treatment period during which the same placard used in the pilot study was deployed on all the shopping carts in both stores was 28 days.

What did IBECC researchers find?

As shown in Figure 4, during the intervention period produce spending per day per person significantly increased by +12.6% in store #2 with respect to baseline conditions (Figure 4). The same is true for store #1 which significantly increased by +7.5%. Total spending per day per person between the treatment and baseline periods didn’t change for either store. The proportion of produce to total spending was significantly greater for the intervention period as compared to the baseline period by +13.3% in store #1 and +8.5% in store #2 (Figure 5).
What do these results mean?

The intervention expansion results confirmed that:

- Results observed with the use of the placards in the pilot study are generalizable
- This novel intervention was as effective at increasing the purchase of fresh fruits and vegetables in grocery stores without increasing shoppers budgets or decreasing store profitability, when deployed in two different stores, at two different time periods and for twice as much time, as the pilot study
4. Takeaways for Your Business

Key Takeaway:

Descriptive and provincial social norm messages on grocery cart placards can be used effectively to increase produce demand without increasing shoppers budgets or decreasing store profitability.

Other Important Takeaways

- Social norms are powerful influencers of individual choice
- Organizations can leverage information about a group’s desirable choices/behavior to influence the choices/behavior of those who consider themselves part of the group
- Nudges (behavioral interventions like social norms signage) need not be costly to be effective
- Effectiveness is not enough to guarantee adoption however, sustainability for both the shopper and the grocery store is essential
- Using social norms in this way could result in a sustained upward shift of fruit and vegetable purchases
- Inventory data and profit margins for the fruits and vegetables experiencing increased purchases is essential for better assessing store profitability and shopper economic sustainability
- Similarly, for stores to better anticipate demand, inventory data is essential to identify which non-produce items (or categories) are being traded for produce items

Caveats

- It is not known if (or when) increases in produce spending begin to decay over the course of the intervention
- It may be that these types of interventions need to be removed after a period of time and reinstalled to regenerate interest
- If too much shopper marketing is deployed in a store for a single purpose (e.g., increasing fruit and vegetable purchases), shoppers may begin to react negatively (Stilley et al., 2010; Clee and Wicklund, 1980).

This is an industry-focused summary of the publication cited below.

For references cited and additional information please consult the original paper: