Situational Determinants of Unplanned Buying in Emerging and Developed Markets

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Measurable Marketing in the Path to Purchase
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Overview

- Motivation and Preliminaries
- Design, Hypotheses, and Data
- Model
- Conclusions
“Europe and the U.S. will be, for the next 10 years, low-growth territories. So, soon we will have 75% of our turnover in emerging markets.”

Paul Polman, CEO Unilever (2011)

[From point-of-purchase to path-to-purchase: How pre-shopping factors affect unplanned buying]
Differences

- Differences are more salient than similarities (Farley and Lehmann 1994); Descriptive and based on Hofstede (1980)

Similarities

- Coca Cola and P & G (initiatives rooted in similarities)
Question
- Are the behaviors different across countries?

Approach
- Levels versus response to situational variables
Hypotheses

- **H₁**: Goal Abstraction
  - UP is monotonically increasing with goal abstraction

- **H₂**: Time and Money
  - UP increases with time and money pressure

- **H₃**: Reasons
  - UP varies with store choice reasons
Data

- **Countries**
  - Brazil, China, Netherlands, United States

- **Buying Behavior**
  - Over 100 product categories and more than 22,000 shopping trips by 3,405 households
D13. Type of trip
(only one answer allowed)

- Big/weekly grocery shop
- Shopping for a special occasion eg for guests, party, special occasion, holidays
- To use straight away/product to eat/drink immediately
- Just for fun/to have a look around
- Slightly
- Other

D14. Special offers seen BEFORE going to the store

- Yes
- No
- Other

D15. If yes, where did you see special offers (more than one answer possible)

- In the newspaper
- On radio
- In a leaflet from a shop
- In a poster promoting a special offer
- On television
- Other

D16. Special offers seen DURING shopping trip

- In store
- In a leaflet from a shop
- On radio
- Other

D17. If yes, where did you see special offers (more than one answer possible)

- In the newspaper
- On radio
- In a leaflet from a shop
- On television
- Other

D18. Please indicate which statement best describes your main feeling BEFORE going to the store (only one answer allowed)

- I knew exactly what I wanted to buy and I wanted the shopping trip to be fast and efficient
- I used to use this shopping trip to browse and look for new products
- I had a particular need, but I didn't exactly know yet how to fulfill it. I planned to make up my mind in the store
- I didn't have a particular need. I just wanted to shop to get inspiration and look at new products/ideas

D19. Time between leaving store and arriving home

Approx. ________ minutes

D20. Please indicate how well the store performed overall during this shopping trip (Use a scale between 0 and 10; 0 = very poor, 10 = excellent)

- Overall opinion of store during this trip

D22. Sort of store (Only one answer allowed)

- Supermarkets
- Other

D23. Product purchases

- Planned to buy before entering store
- Decided in store
- Brought

- Which of these items were bought during this trip

- Fresh vegetables/fruit/potatoes
- Meat/chicken (incl. Meat products)
- Fish
drink & drink strips
- Chips/salad dressings
- Cereals (corn flakes, muesli, etc.)
- Bread incl. cracker/bread/roll/bread rolls
- Sundried tomatoes (non-traditional)
- Soft drinks/fruit/nuts
- Wine and other alcoholic beverages
- Frozen ice cream
- Frozen vegetables/potato products/fish/meat
- Frozen meals
- Pet food
- Baby and toddler food
- Hair and beauty products
- Sanitary products
- Water
- Bath and shower products
- Shampoo and conditioner
- Multivitamins and multivitamin powder
- Shaving products
- Other

D24. Total amount spent in Euros during this trip

€ ________

D25. Total amount spent in Euros on all the Foods, Home and Personal Care items

€ ________

* Please fill in the total amount spent EXCLUDING THE COST of articles in the grey box above. Please put the receipt in the envelope provided.
D23. Product purchases

<table>
<thead>
<tr>
<th></th>
<th>Planned to buy before entering store and bought</th>
<th>Decided in store and bought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh vegetables/fruit/potatoes</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Meat/chicken (incl. Meat products)</td>
<td>02</td>
<td>02</td>
</tr>
<tr>
<td>Fish (incl. crustacean and shellfish)</td>
<td>03</td>
<td>03</td>
</tr>
<tr>
<td>Chilled soup</td>
<td>04</td>
<td>04</td>
</tr>
<tr>
<td>Chilled meals/pizzas</td>
<td>05</td>
<td>05</td>
</tr>
<tr>
<td>Fresh dairy products (drinks and desserts)</td>
<td>06</td>
<td>06</td>
</tr>
<tr>
<td>Long-life dairy products (incl. Yoghurt drink and chocolate milk)</td>
<td>07</td>
<td>07</td>
</tr>
<tr>
<td>Cheese</td>
<td>08</td>
<td>08</td>
</tr>
<tr>
<td>Butter/margarine</td>
<td>09</td>
<td>09</td>
</tr>
<tr>
<td>Eggs</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

... 58 categories total

\[ DV = \sum \text{ across categories} \]
Fixed effects Poisson count model for number of unplanned category purchases per shopping trip, i.e., \(UP_{ht}\) for household \(h\) on shopping trip \(t\)

\[
E[UP_{ht}|x_{ht}, z_{ht}, \alpha_h] = \alpha_h \exp(x'_{ht}\beta + z'_{ht}\gamma)
\]

\(\alpha_h\): household-specific baseline
\(x_{ht}\): exponential function of the main drivers of interest,
\(z_{ht}\), control variables (e.g. store and week day fixed effects)

Trimmed Least Squares Tobit Model

\[
\frac{UP_{ht}}{\log(\tau_{ht})} = \max \{\alpha_h + x'_{ht}\beta + z'_{ht}\gamma + \varepsilon_{ht}, 0\}.
\]
Unplanned Purchases increase on Major Trips between 40-60%. The lift of other Trip Types on Unplanned Purchases is modest.
### Goal Abstraction

<table>
<thead>
<tr>
<th></th>
<th>CHINA</th>
<th>BRAZIL</th>
<th>USA</th>
<th>NL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unplanned Category Purchases (UP)(units)</td>
<td>1,362</td>
<td>0,949</td>
<td>1,892</td>
<td>1,384</td>
</tr>
<tr>
<td>Planned Category Purchases (units)</td>
<td>2,069</td>
<td>4,76</td>
<td>4,911</td>
<td>5,01</td>
</tr>
<tr>
<td>Basket in local currency</td>
<td>¥ 53,71</td>
<td>R$ 38,63</td>
<td>$ 40,73</td>
<td>€ 21,49</td>
</tr>
<tr>
<td>Basket in US$</td>
<td>$ 8,41</td>
<td>$ 20,88</td>
<td>$ 40,73</td>
<td>$ 28,73</td>
</tr>
<tr>
<td>% UP / basket (units)</td>
<td>40%</td>
<td>17%</td>
<td>28%</td>
<td>22%</td>
</tr>
<tr>
<td>UP / basket in local currency</td>
<td>¥ 21,32</td>
<td>R$ 6,42</td>
<td>$ 11,33</td>
<td>€ 4,65</td>
</tr>
<tr>
<td>% increase in terms of amount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Trip (Most Abstract)</td>
<td>20%</td>
<td>8%</td>
<td>16%</td>
<td>17%</td>
</tr>
</tbody>
</table>

UP Units constitute between 20-40% of Basket. UP Value increases by 10-20% on Major Trips.
## Time, Money, Reasons

**Finding 1: Shopping Goal Abstraction**

<table>
<thead>
<tr>
<th>Dependent Variable: $U_{ht}$</th>
<th>Brazil</th>
<th>China</th>
<th>USA</th>
<th>NL</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_1$, Immediate Consumption; To Use Straight Away</td>
<td>.022</td>
<td>-.171***</td>
<td>-.145**</td>
<td>.001</td>
</tr>
<tr>
<td>$\beta_2$, Same Day; Shopping for Meals on the Same Day</td>
<td>-.235</td>
<td>-.024</td>
<td>.047</td>
<td>.254*</td>
</tr>
<tr>
<td>$\beta_3$, Fill-in Trip; Daily Essentials, Top-up Shopping</td>
<td>.154</td>
<td>-.045</td>
<td>.288***</td>
<td>.297*</td>
</tr>
<tr>
<td>$\beta_4$, Major Trip; Weekly or Less Often</td>
<td><strong>.412</strong>*</td>
<td><strong>.401</strong>*</td>
<td><strong>.451</strong>*</td>
<td><strong>.571</strong>*</td>
</tr>
</tbody>
</table>

**Finding 2: Trip-Specific Reasons for Selecting Store**

<table>
<thead>
<tr>
<th></th>
<th>Brazil</th>
<th>China</th>
<th>USA</th>
<th>NL</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_5$, A: “Large Assortment”</td>
<td><strong>.375</strong>*</td>
<td><strong>.052</strong>*</td>
<td>.187+</td>
<td>.188**</td>
</tr>
<tr>
<td>$\beta_6$, B: “Low Prices”</td>
<td>-.086</td>
<td><strong>.078</strong>*</td>
<td>.166***</td>
<td>.102</td>
</tr>
<tr>
<td>$\beta_7$, C: “Attractive Promotions and Special Offers”</td>
<td>.215</td>
<td><strong>.052</strong></td>
<td>.000</td>
<td>.132*</td>
</tr>
<tr>
<td>$\beta_8$, D: “I Can Visit Other Stores at the Same Time”</td>
<td><strong>-.243</strong>*</td>
<td>-.030</td>
<td>.010</td>
<td><strong>-.148</strong>*</td>
</tr>
<tr>
<td>$\beta_9$, E: “One-Stop Shopping”</td>
<td>.018</td>
<td>.068</td>
<td>.113+</td>
<td>.053*</td>
</tr>
<tr>
<td>$\beta_{10}$, F: “Food Safety”</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Finding 3: Time and Money Resources**

<table>
<thead>
<tr>
<th></th>
<th>Brazil</th>
<th>China</th>
<th>USA</th>
<th>NL</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\beta_{11}$, Need to Pay Attention to Time</td>
<td>.012</td>
<td>-.162***</td>
<td>-.136***</td>
<td></td>
</tr>
<tr>
<td>$\beta_{12}$, Need to Pay Attention to Prices</td>
<td>.300*</td>
<td>.126*</td>
<td>.138**</td>
<td></td>
</tr>
</tbody>
</table>
Conclusions

- Factors on path-to-purchase drive behavior
  - Levels differ, responses do not

- Intervention can be generate revenue
  - Average increase of about 15% due to abstraction
  - Other effects smaller, but significant and still suggest malleability
Q & A