

E-Channel Differences in Selection Strategies

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Introduction

Online shopping has become a vital part of the retail landscape. Amazon, valued at \$4.5 billion 15 years ago, is now worth closer to \$350 billion³¹. And with the increasing popularity of social media and the emergence of mobile as a viable shopping platform²¹, online retail is predicted to continue to grow in importance. And yet, the nuances of how people shop online across classes of trade and e-channel are not well understood.

In this study, we investigated how consumers shop online for tangible vs. experientially-oriented goods. We hypothesized that consumers would employ different strategies when shopping for different classes of products and that these strategies would be shaped by both delay discounting³¹ (in which shoppers value goods received now more highly than identical goods received later) and affective forecasting⁴¹ (in which consumers make valuations now by imagining how they might enjoy a purchase in the future).

Methods

Participants (N=118, 51M, 67F, ages 19-63, mean age 32.5) shopped on one of four e-Channels: Amazon Pantry or Peapod, which sell tangible goods, and Amazon Video or Groupon, which primarily sell experientially-oriented goods.

Each participant was given a gift card (\$30 for Amazon Pantry, Amazon Video, and Groupon; \$100 for Peapod) and instructed to shop the channel accordingly⁵¹:

Participants shopped using one of three platforms: desktop computer, tablet, or smart phone. Eye gaze, key presses, heart rate (HR), skin conductance response (ER-SCR), and facial expressions were captured using a Tobii camera (X2-30), Shimmer device, and iMotions software. Participants also completed questionnaires measuring state (e.g., hunger) and trait (e.g., impulsivity, self-control) variables, both before and after shopping.

Key Findings

- 1 Percentage of budget spent varied per e-channel. When shopping for tangible goods, participants spent more than their task-allotted budget (\bar{x} =101%). Those who shopped for experientially-based goods not spend their entire windfall budget (\bar{x} =69%) (see figure 1(A)).
- 2 Nonverbal and behavioral responses vary systematically across trip by time and e-channel. Across participants in each channel, heart rate, electro-dermal activity, facial expressions⁶¹ and visual search patterns changed systematically across time. Participant's total trip times were collected from the moment after log in to the point of purchase (e.g. the moment that the order was placed). Each shopping trip was then segmented into four equal time quartiles. Interactions of nonverbal and behavioral responses were considered across these time quartiles as a function of e-channel type. Consumer's trip time averaged 14 minutes in duration across all e-channels (\bar{x} =14:03, sd 06:06).
- 3 Product comparisons occurred earlier and more frequently for tangibles. A significant effect across shopping trip time was found for a novel metric we refer to as "deliberation frequency" (a derivative metric combining fixation data and click behaviors) which measured how often shoppers consider other items before coming back and selecting the original item viewed), varied significantly across shopping trip quartiles as a function of e-channel. Deliberation was particularly strong in the second quartile for tangibles. For experiences, deliberation was low and consistent across trip. (see figure 1(B)).
- 4 Selection strategy differed per e-channel. Number of items removed from cart differed significantly across quartiles as a function of e-channel. Tangible goods went through a round of deselection at the end of the shopping trip. (see figure 1(C)).



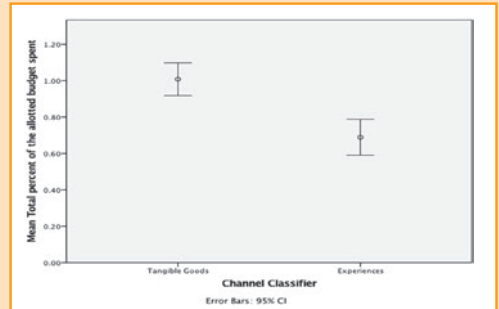
- 5 The value of items added to cart varied per e-channel. Shoppers of tangible goods tended to select more expensive items early on, whereas shoppers of experiential goods added expensive items at the end of the trip. (see figure 1(D)).
- 6 Participants had a significantly higher heart rate while shopping for tangible goods. A repeated measures ANOVA found a main effect of heart rate, in beats-per-minute by e-channel type across equally-binned trip duration quartiles. This suggests a higher level of vigilance in the tangible goods condition, related perhaps to the great amount of product choice present. (see figure 2(A)).
- 7 The frequency of Skin Conductance Response events (ER-SCRs) increased across the shopping trip in both conditions. A significant difference in ER-SCR rate was found across equally-binned shopping trip duration quartiles. This suggests arousal increased over time, reaching its highest level during checkout (see figure 2(B)).
- 8 Facial expressions differed across e-channel. For this analysis, we held the e-channel constant and assessed differences in facial expressions with respect to specific categories of interest for participants who shopped Amazon Pantry (tangible goods) vs. Amazon Video (experiences). A significant difference in the frequency of negative facial expressions was found early in the trip for the Amazon Video condition, which subsided during the latter portion of their trip. In contrast, negative facial expressions increased steadily across the shopping trip for Amazon Pantry, reaching a maximum just after purchase. Their facial expressions suggest shoppers of experientially-oriented goods ended their trips in a better mood than shoppers of tangible goods. (see figure 2(C)).

Discussion

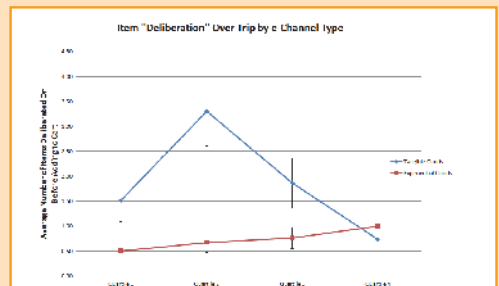
The results demonstrate that there are important differences in the decision strategies adopted by consumers when shopping for tangible vs. experiential goods online. For tangible goods, participants progressed through four stages: orientation, selection, deselection, and final purchase. In the selection stage, shoppers exerted cognitive effort evaluating a wide array of consumable and durable goods. In the second half of the shopping trip, irrespective of total time spent, consumers went through a round of de-selection, where some products were removed from the cart. At final purchase, participants experienced elevated heart rates and exhibited

» Page 18

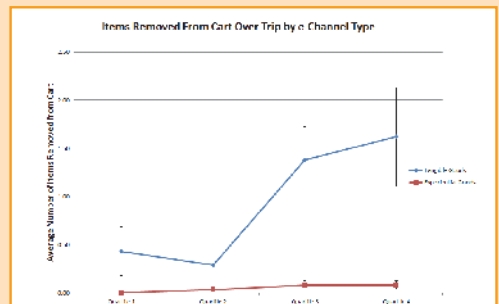
Figure 1:



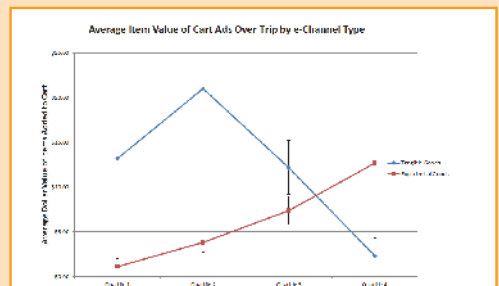
A) Shoppers for tangible goods e-channels spent their entire budget vs. only 69% of budget for experiential shoppers.



B) Deliberation was highest in the quartile 2 for tangible goods oriented e-channels.



C) Tangible goods went through a round of "de-selection" in quartiles 3 and 4.



D) More expensive tangible goods were bought early in the shopping trip (quartile 2) whereas experiential shoppers bought more expensive items at the end of the shopping trip.

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more negative facial expressions than shoppers of experiences. This could be explained by two factors: 1) loss aversion associated with budget-driven deselection and 2) delay discounting related to product valuation that is especially salient with online purchasing.

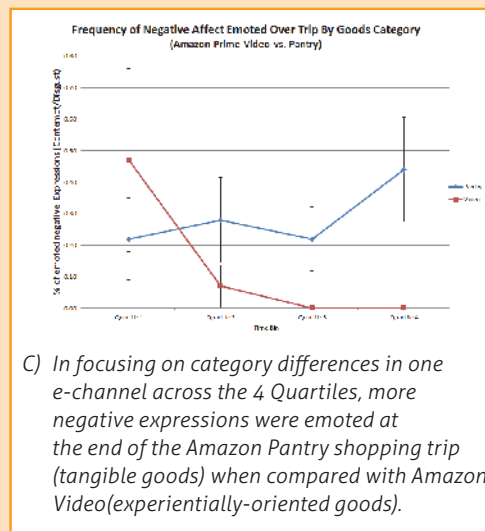
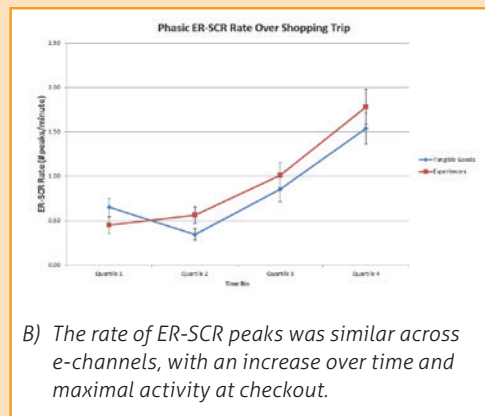
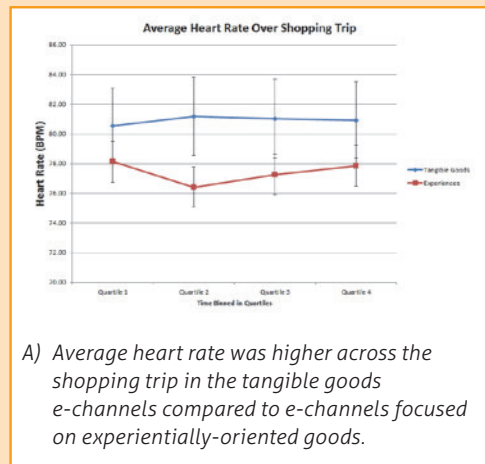
For experiential goods, shoppers appeared to invest mental energy into affective forecasting of positively oriented future outcomes (e.g., imagining how they might share a Groupon, for example). As a result, they considered fewer options and waited until the end of the shopping trip before adding their selections to the cart. They also tended to have lower heart rates and exhibited fewer negative facial expressions at the end of their shopping trips than shoppers of tangible goods.

Potential online applications of findings

Online consumers changed their behavior in predictable ways over the course of the shopping trip. If average trip duration and e-Channel are known, or if characteristic behavior clusters occur that relate to specific decision strategies in the online path to purchase, advertisers can use this information to predict where a particular shopper is in their path to purchase and tailor advertising accordingly to most effectively resonate with their emotions in real time (e.g. promote hedonic messages in early phase of trip and value-oriented messaging in the latter portion of the trip). It may also be possible to leverage the manner in which consumers evaluate a product, for example: highlighting the experiential aspects and usage occasions of a tangible product might prompt a consumer to evaluate it more like an experience, which may protect the item from later deselection. For shoppers of experiences, it might be possible to nudge incremental sales by positioning relevant tangible goods temporally-proximal to checkout (e.g., a “snack pack” to go with the purchase of a movie or television series).

We used a combination of self-report, behavioral, and biophysical measures to develop a deeper understanding of the nuances of online consumer behavior. Knowledge garnered from integrated data streams such as these can inform new innovations in online advertising that speak to consumers where they are in their online shopping journey and how they feel and make decisions in order to create new opportunities to enhance customer satisfaction and spending.

Figure 2:



About Merchant Mechanics

Merchant Mechanics is a multiple award-winning, United States-based research firm specializing in shopper insights, consumer neuroscience and behavioral economics. With extensive expertise in the cognitive, behavioral and affective neurosciences, Merchant Mechanics services major brand clients, in consumer insights, marketing and advertising research. Since 2000, Merchant Mechanics has delivered best-in-class market research, helping clients gain objective, actionable insights by untangling the intricacies of consumer behavior and decision making.

References available on request via office@nmsba.com