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## Indulgent Consumption: Redemption Windows and the Appeal of Daily Deals

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## Report Summary

Daily deals, such as those offered on Groupon and LivingSocial websites, are widely popular, attracting millions of users and generating billions in revenues. One of the prominent features of such deals is a redemption window—the time period during which consumers can redeem the purchased deal.

Understanding consumers' response to the length of redemption windows is important in predicting the relative success and failure of daily deals. A longer redemption window might make the deal more attractive to consumers (by increasing flexibility regarding when to use the deal), but it also prolongs the duration in which goods are sold at a reduced price, thus negatively impacting retailer revenues. Redemption windows are also important to the platform offering the deal (e.g., Groupon), because its length affects consumer purchases, and consequently profits.

Yogesh Joshi and Anastasiya Pocheptsova analyzed a total of 13, 173 Groupon deals available from January 3 to July 3, 2011 in 20 major cities. They find that redemption windows vary substantially across deals, from as short as 30 days to longer than a year. Further, the authors find that consumers show a suboptimal preference for deals with shorter redemption windows. This finding is in contrast to the rational expectation that consumers would prefer longer redemption windows, since they may anticipate some uncertainty regarding when they would have an occasion to redeem a particular deal.

The authors propose that preference for the length of redemption window depends on the nature of the deal: hedonic versus utilitarian. Specifically, they suggest that deals with longer (vs. shorter) redemption windows are associated with higher anticipated guilt for indulgent consumption, and this negatively affects the likelihood of purchasing hedonic but not utilitarian types of deals. They demonstrate the interactive effect of the type of the deal and the length of redemption window on purchase likelihood using both laboratory experiments and analyzing large data sets of daily deals sold by Living Social and Groupon.

Because the majority of retailers on daily deal platforms promote indulgent consumption (e.g., restaurants, spa treatments, entertainment), these results provide a counterintuitive and potentially useful insight: more restrictive offers that limit the time to redeem the deals should increase sales for retailers and raise revenues for the daily deals platforms.

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Daily deals, such as those offered by Groupon and LivingSocial websites, have recently become popular with consumers, attracting millions of users and generating billions in revenues. For example, Groupon reports its active customer base (customers that have purchased a voucher within the last 12 months) grew 9% year-over-year to 44.9 million as of December 31, 2013; and its worldwide revenues increased by 10% to \$2.6 billion in 2013, compared with \$2.3 billion in 2012 (with revenue growth in North America of 31%).<sup>1</sup> Surveys indicate that from 2011 to 2012, the average amount spent by new customers on daily deals grew by ~50%, the average amount spent at the merchant beyond the daily deal value grew by ~150%, and the average amount spent by repeat customers at merchants, beyond the deal purchase, grew by ~70% (Dholakia 2012). This finding suggests daily deals continue to be a profitable form of promotion for merchants and businesses, attracting new and repeat customers.

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Daily deal websites typically offer local products or services that can be purchased at a substantial discount (40%-60%, on average). Figure 1 provides an example of a typical daily deal from the Groupon website. Consumers are invited to purchase for a price of \$10 a prepaid voucher that is worth \$20 at a local restaurant. As one might anticipate, not all deals are successful for the merchant offering the deal or the platform hosting the deal. Across multiple surveys, Dholakia (2012) reports that the proportion of daily deals that are profitable ranges between 55% and 61%. Daily deals are just as likely to be successful for firms without any additional marketing spending as for those that spend heavily on marketing activities alongside offering such deals. Dholakia (2012) also reports that categories such as salons, spas, and health and fitness services have relatively more success with daily deals as compared to categories such as retailers and restaurants. Another potential downside to daily deals, as identified by researchers, is that running a daily deal is associated with an increase in the number of online reviews and a decrease in the average rating for the merchant offering the deal (Byers et al. 2012).

Given these varied outcomes, researchers have begun investigating the role of different daily deal features to better understand their impact on the relative success and failures of daily

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<sup>1</sup> Groupon 2013 10K report (<http://investor.groupon.com/secfiling.cfm?filingID=1490281-14-24>).

deals. Many features characterize a typical daily deal (see Figure 1): the total face value of the deal; the price that the consumer has to pay for that particular face value; the percentage discount that a consumer gets by purchasing the deal; an expiry date for the deal; options to purchase this deal as a gift to others; timeframe to redeem the deal once it is purchased; the ability to share this deal with friends via email, social media, or otherwise; an option to indicate “liking” for the deal on social media, and so on.

A feature that has received quite a bit of attention from researchers so far is the social aspect of the daily deal. Byers et al. (2012) showed that consumers are motivated to recruit other consumers via activities such as sharing and liking these deals. The minimum thresholds set for a deal to become active (also Jing and Xie 2011), as well as the ability to obtain a free deal if a certain number of “friends” purchase the offered deal via a personalized link, serve as strong incentives in motivating such consumers. Consequently, a positive correlation exists between the extent of social sharing and sales achieved by the deal.

In this paper, we focus on a critical daily deal feature that has received little attention in past research research, namely, redemption windows. A redemption window is defined as the time period during which consumers can redeem the purchased deal. Figure 2 provides an illustration of a redemption window. A casual observation of daily deal sites reveals that redemption windows vary substantially across deals, from as short as 30 days to as long as a year or even longer.

We focus on redemption windows given their importance from a merchant’s perspective, because the duration of redemption windows affects revenues. On one hand, a longer redemption window might make the deal more attractive to consumers (by increasing flexibility regarding when to use the deal), but on the other hand, it also prolongs the duration in which goods are sold at a reduced price, thus negatively impacting revenues. Redemption windows are also important to the platform offering the deal (e.g., Groupon), because its length affects consumer purchases, and consequently profits. Given this significance of redemption windows for both retailers and platforms, understanding consumers’ response to the length of redemption windows is important in predicting the relative success and failures of daily deals.

From a consumer's perspective, longer redemption windows can increase the likelihood of using the deal and utilizing the savings. Consumers typically anticipate some uncertainty about when they would have an occasion to redeem a particular deal. Hence, from a rational perspective, all else equal, a deal with a longer redemption window should be more attractive to consumers than one with a shorter redemption window. Interestingly, we observe that this assumption is not always correct and that shorter time windows can be associated with higher sales. Building on research that shows consumption of indulgent goods frequently evokes feelings of guilt (Khan and Dhar 2010; Kivetz and Simonson 2002; Kivetz and Zheng 2006; Okada 2005), we argue that consumers might prefer shorter rather than longer redemption windows for deals associated with indulgent (vs. utilitarian) goods or services. We demonstrate this pattern across both laboratory experiments and two large-scale data sets from the Groupon and Living Social websites.

The rest of the paper is organized as follows. We first review the literature that makes predictions about consumer preference for long and short redemption windows. We then describe our data and test the relationship between redemption windows and sales. We first analyze data from Groupon to demonstrate consumers' preference for shorter redemption windows, for which we hypothesize a behavioral explanation that we test in a series of follow-up laboratory experiments. Finally, we analyze data from LivingSocial, by incorporating our learning from the laboratory experiments, to demonstrate that the effects we observe in the lab also hold in this external data set. We conclude with a summary of our findings and implications for marketers and consumers.

## **Theoretical Background**

### **Consumer preference for long redemption windows**

Consumers face numerous economic restrictions in the marketplace, such as limits on the number of items they can purchase, time limits on price discounts, or restrictions on how they can use accumulated loyalty points. Prior work shows consumers generally have negative reactions to restrictions that retailers and suppliers impose on them, frequently resulting in a reactance to such restrictions (see Botti et al. 2008 for a review; also Fitzsimons 2000 and Ratner

et al. 2008). This reaction happens because consumers generally prefer to have a choice concerning consumption outcomes (Iyengar and Lepper 2002; Wertenbroch, Vosgerau, and Bruyneel 2008). Imposing restrictions can focus consumers on consumption options they won't be able to experience (Carmon, Wertenbroch, and Zeelenberg 2003), increasing the perceived value of these options (Brehm et al. 1966) and decreasing purchase likelihood. Based on this literature, redemption windows can be seen as limiting consumers' ability to control when to consume an acquired product or service, which in turn should have a negative effect on consumers' evaluation of the deal with shorter redemption windows, and ultimately the purchase incidence. Therefore, consumers should prefer longer redemption windows that place fewer restrictions on their consumption choices compared to shorter redemption windows.

Another reason consumers might prefer longer redemption windows is the uncertainty associated with predicting future consumption. Consumers frequently experience uncertainty about their consumption preferences in the future (Kahneman and Snell 1992, Simonson 1990, Walsh 1995), and the accuracy of their predictions decreases with the length of time between prediction and consumption (Morwitz 2007). Long redemption windows, therefore, provide more flexibility regarding when to use the deal, thus increasing the potential for consumption. A priori, one might expect any uncertainty in consumption timing to lead consumers to prefer deals with longer redemption windows to those with shorter windows. The simple argument below illustrates this issue.

Suppose a consumer is in the market for a daily deal. This consumer would purchase the deal if the net surplus from consumption of the deal exceeds her surplus from consumption of an outside option. Denote the surplus this consumer obtains upon consumption of the daily deal by  $s > 0$ , and normalize the surplus from consumption of the outside good to 0. Now, suppose this consumer is uncertain about her consumption of the daily deal in a given time period. Let  $p$  denote the probability that this consumer redeems the deal in any given time period ( $0 < p < 1$ ). In this case, the consumer's expected utility from a deal  $D1$  that is valid for one time period only would be  $EU[D1] = p s$ . On the other hand, the expected utility from deal  $D2$  that is valid for two time periods would be  $EU[D2] = (p + d(1-p)p) s$ , where  $d$  is the discount factor ( $0 < d \leq 1$ ). It is easy to see that  $EU[D2] > EU[D1]$ .

Taken together, the above arguments suggest consumers should prefer daily deals with longer redemption windows, in order to have flexibility in the consumption of that daily deal. However, as noted earlier, this assumption may not always be correct in the daily deals market. Next, we provide our reasoning for why consumers might exhibit a suboptimal preference for shorter, rather than longer, redemption windows.

### **Preference for short redemption windows for indulgent products**

Prior research suggests consumer response to marketing promotions might differ depending on the nature of the product being offered, for instance, whether the products are hedonic or utilitarian in nature (Khan, Dhar, and Wertenbroch 2005; Khan and Dhar 2010). Hedonic products may be acquired and consumed for pleasure or fun; by contrast, utilitarian products may be acquired and consumed for functional or practical purposes (Dhar and Wertenbroch 2000). Further, hedonic products may appeal to consumers on an emotional rather than on a rational, cognitive level (Shiv and Fedorikhin 1999). Within the set of hedonic products, a subset of interest to us is indulgent or vice goods. These goods primarily provide hedonic benefits, but critically also have potential long-term costs (Dhar and Wertenbroch 2012, Wertenbroch 1998). For example, listening to music could be a hedonic but not indulgent consumption activity, because no costs may be involved with this pleasurable consumption. However, eating a chocolate cake could be a hedonic as well as indulgent experience, because although one consumes the cake for pleasure, such consumption could involve potential long-term costs to one's health.

When considering consumer feelings during indulgent consumption, a key aspect is consumers' experienced and anticipated feelings of guilt (Goldsmith, Cho, and Dhar 2012; Khan and Dhar 2006, 2010; Kivetz and Zheng 2006; Okada 2005). These feelings of guilt often arise because buying indulgent goods may be seen as a failure of self-regulation, in conflict with the pursuit of important long-term goals (e.g., health, savings, etc.; Dahl, Honea, and Manchanda 2003). Thus, during indulgent consumption, feelings of pleasure and guilt may be closely interlinked and experienced together (Goldsmith et al. 2012). Consequently, goods that provide the highest pleasure (i.e., desired hedonic items) may inspire the most guilt (Lascu 1991).

Because consumers are often motivated to avoid feelings of guilt, prior research demonstrates that marketing actions designed to mitigate such guilt (e.g., price discounts in Khan and Dhar 2010, higher effort requirements in loyalty programs in Kivetz and Simonson 2002, and donations to charity in Khan and Dhar 2006) may be effective in increasing sales for indulgent goods and services.

Based on these findings, we predict that in the context of daily deals, duration of the redemption window could affect feelings of guilt associated with consumption of indulgent daily deals. Prior research demonstrates that when consumers focus on the future, they are more likely to choose to consume inline with their long-term goals, and are less likely to yield to temptations (Fujita et al. 2006). For example, consumers are more likely to order healthy groceries when placing an order for future consumption (Milkman, Rogers, and Bazerman 2010). Similarly, research investigating the role of the future self in consumer choices (Bartels and Rips 2010, Bartels and Urminsky 2011) demonstrates that when connectedness to the future self is high, immediate spending is decreased in favor of a long-term goal of saving. These findings suggest longer redemption windows may increase consumers' anticipated guilt from consuming indulgent daily deals, because such consumption conflicts with consumers' focus on long-term goals.

Based on these previous findings, we propose that redemption windows will have a differential effect on consumers' preferences depending on whether the deal is of an indulgent or a utilitarian nature. Specifically, we expect that deals with longer redemption windows will be less appealing for indulgent products and services, because consumers will anticipate a higher level of guilt for longer redemption windows. In the five studies presented next, we use both field and experimental data to test these propositions by examining the effect of different lengths of redemption windows offered in the marketplace (from one day to one year) on consumer purchase and preference for daily deals.



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 focused our analyses on the most popular product categories, as classified by Groupon  
 (categories containing 1,000 or more deals): Arts & Entertainment (2,621 deals; e.g., \$49 for a  
 two-hour point-and-shoot or beginner-level DSLR photography workshop from Chimpsy, a \$125  
 value), Beauty & Spa (2,437 deals; e.g., \$35 for your choice of a facial or a one-hour massage at  
 Essentials Laser & Med Spa in Brockton, up to \$70 value), Food & Drink (1,179 deals; e.g., \$12  
 for a Dozen Gourmet Cupcakes at Beautiful Cakes, a \$24 value), Health & Fitness (2,038 deals;  
 e.g., \$20 for 30 Consecutive Days of Yoga Classes at Crescent Yoga in Midlothian, a \$90 value),  
 Restaurants (2,760 deals; e.g., \$15 for \$30 Worth of Japanese-Fusion Cuisine and Drinks at  
 BluFin Sushi in Grosse Pointe Farms), and Shopping (2,138 deals; e.g., \$25 for \$50 Worth of  
 Childcare Items at ANB Baby in Brooklyn). For each deal, data included information about the  
 following features: the duration of the deal, that is, how long the deal was available for purchase  
 on Groupon ( $M = 2.14$  days); deal value, that is, the face value of the deal ( $M = \$125.4$ ); percent  
 discount off the face value ( $M = 56\%$ ); number of deals sold (our main dependent measure,  $M =$   
 $742$ ); and the number of “likes” that the deal received on Facebook ( $M = 59.3$ ). We  
 supplemented this data set with information on the key independent variable—the redemption  
 window for each deal ( $M = 197.7$  days, or approximately 7 months)—which we collected from  
 the Groupon website.

Histograms plotted for the variables described above reveal that the data distributions for  
 face value, number of deals sold, number of likes, and redemption window were skewed/covered  
 a wide range of values. Hence, we log-transformed these variables for the purpose of the  
 subsequent analysis.

Figure 3 visually summarizes the key variables in the data. Figure 3[a] reveals a  
 decreasing pattern between deals sold and the face value of the deal, as one would expect.  
 Similarly, Figure 3[b] reveals an increasing pattern between deals sold and the percent discount  
 off face value offered on the deal. Figure 3[c] illustrates the positive association between  
 Facebook likes and sales for Groupon deals. Finally, Figure 3[d] plots deals sold against the  
 length of the redemption window in days for all deal types, and suggests a slight positive  
 association between the two.

One issue with testing our predictions using this data set is identification of indulgent consumption deals within hedonic deals. Although the six categories of deals we examine are hedonic in nature, whether all of the deals within these categories are indeed indulgent is less clear (i.e., both hedonic and evoke feelings of guilt). To address this shortcoming of the data, building on the research connecting liking and feelings of guilt for indulgent consumption (Goldsmith et al. 2012, Lascu 1991), we assume Groupon deals that are highly liked are also more likely to be seen as indulgent deals by consumers. To test this assumption, we conducted a pilot test (N = 99) in which we asked participants to imagine two scenarios involving deals from two Groupon product categories: Food & Drink and Beauty & Spa. In the first scenario, a consumer, Jen, received two Groupons for \$5 off desserts. One was for dessert from a local bakery that she really likes, and the other was for dessert from a convenience store that she does not like. We asked participants to report which dessert-consumption experience Jen would find more indulgent (on a 7-point scale: 1=*dessert from convenience store*, 7=*dessert from bakery*, 4=*equally indulgent*). Similarly, we asked participants to imagine Jen received two Groupons for 50% off a massage. One was for a massage in a boutique spa that Jen really liked, and the other was for a spa in the mall that she did not like. We asked participants to report which of the massage experiences Jen would find more indulgent (on a 7-point scale: 1=*massage at a spa in the mall*, 7=*massage at a boutique spa*, 4=*equally indulgent*). The results indicate participants rated hedonic experiences from highly liked providers to be significantly more indulgent than the same experiences from providers the consumers did not like (both means were significantly higher than the mid-point of the scale:  $M_{\text{dessert}} = 6.51$ ,  $t(98) = 22.64$ ,  $p < .001$  and  $M_{\text{massage}} = 6.55$ ,  $t(98) = 24.76$ ,  $p < .001$ ). Looking at the data differently, we find that 94.9% of the participants rated hedonic experiences from highly liked providers to be more indulgent. This finding confirms our assumption that highly liked hedonic deals are more likely to be seen as more indulgent; hence, we include liking as a measure in our analysis to examine the difference between indulgent and non-indulgent deals.

## **Results and discussion**

We ran a regression analysis to understand the relationship between the length of the redemption window and the indulgent nature of the daily deal on the sales of the deal and

consumers' propensity to acquire daily deals. Below, we specify the regression model that we analyzed:

$$\begin{aligned} \text{Log(Deal Sales)} = & b_0 + b_1 \text{Log(Value)} + b_2 \text{Percent\_Discount} \\ & + b_3 \text{Deal\_Duration} + b_4 \text{Log(Redemption\_Window)} \\ & + b_5 \text{Log(Likes)} + b_6 \text{Log(Redemption\_Window).Log(Likes)}. \end{aligned}$$

As the results in Table 1 indicate, we observe several main effects that are consistent with prior literature. First, as one might expect, we observe a negative association between the face value of the deal and the deal's sales. Second, the percentage discount offered as well as the number of Facebook likes are positively associated with sales. Third, the deal duration is negatively associated with deal sales; that is, deals that are kept alive on Groupon longer also tend to be the ones that sell less.

Finally, the length of the redemption window is positively associated with sales, consistent with rational expectations. However, a significant and negative interaction effect of the attractiveness of the product/service and the redemption window length qualifies this effect (Figure 4). A spotlight analysis reveals, consistent with our predictions, that consumers were more likely to buy deals for highly desirable hedonic products when the redemption window was short rather than long (+1SD:  $M_{\text{short}} = 1501.3$  vs.  $M_{\text{long}} = 1339.2$ ,  $t(12,619) = 4.40$ ,  $p < .001$ ), but the reverse was true for less desirable hedonic products (-1SD:  $M_{\text{short}} = 0$  vs.  $M_{\text{long}} = 236.65$ ,  $t(12,619) = 7.67$ ,  $p < .001$ ).

Our results from the analysis of daily deals offered on the Groupon website suggest that a preference for longer redemption windows does not hold for highly liked hedonic deals. This finding is consistent with our proposition that consumers will be more likely to prefer indulgent deals with shorter rather than longer redemption window, because of anticipated feelings of guilt consuming those deals in the future. In the three studies that follow, we aim to replicate the effect of redemption window length on preference for indulgent deals in a controlled experimental setting. Whereas in Study 1, we used Facebook likes as a proxy for the indulgent nature of the service or product being offered via the daily deal, in Study 2, we selected two

highly liked retailers based on a pretest (CVS and Amazon) and two indulgent products identified in prior research (chocolates and movies). Importantly, to provide a direct test of our propositions, we measured anticipated feelings of guilt and negative affect regarding consumption of these indulgent deals.

Finally, in the next study, we address a competing hypothesis that consumers may see a shorter redemption window as a signal of product scarcity. Prior research has documented that a perception of product scarcity in the marketplace, for example, due to limited product or discount availability, can positively affect consumer preferences by enhancing perceptions of the product's popularity and quality (Inman and McAlister 1994; Inman, Peter, and Raghurir 1997; Parker and Lehmann 2011; van Harpen et al. 2009). Although this explanation does not account for the interactive effect of redemption windows and products' attractiveness on deal's sales found in Study 1, we wanted to address it directly by measuring perceptions of product scarcity as a function of redemption window length in Study 2.

## **Study 2: Preference for Short Redemption Windows for Indulgent Deals**

### **Design**

Undergraduate participants ( $N = 83$ ) completed this study in exchange for course credit. We randomly assigned them to one of two cells in between subject design: one month vs. six months redemption window. We asked participants to evaluate two daily deals offered by a "Groupon-like website." Specifically, we asked them to evaluate a deal by CVS that was offering "50% off (pay \$2.5 to get \$5)" for candy and chocolate and a deal by Amazon that was offering "50% off (pay \$5 to get \$10)" for movies and music (Figure 5). We selected these two retailers based on a pretest ( $N = 56$ ). Specifically, these two retailers were judged as attractive retailers on a scale from 1 (*not at all attractive*) to 100 (*extremely attractive*), with a mid-point of 50 (*moderately attractive*) ( $M_{CVS} = 60.68$ , significantly different from mid-point,  $t(55) = 3.10$ ,  $p = .003$ ;  $M_{Amazon} = 79.29$ , significantly different from mid-point,  $t(55) = 9.73$ ,  $p < .001$ ).

Importantly, we manipulated the length of the redemption window between participants. The deal had to be redeemed within one month (short window) or six months (long window). We asked participants whether they wanted to take a deal (yes or no) for each deal. On the following

page, we also asked participants to indicate on a 7-point scale (1=*not at all*, 7=*very much*) how guilty, happy, satisfied, and thrifty they would feel using these deals. We combined the first three items (with happy and satisfied reverse-coded) to measure the negative affect consumers experienced when consuming indulgent deals (Cronbach's alpha = .70). We expected that guilt and negative affect anticipated when consuming hedonic deals with a longer redemption window would negatively affect participants' preference to buy these deals.

Finally, to address the possibility that length of redemption windows affects perceptions of deals scarcity, we asked consumers to estimate how many of these deals CVS and Amazon issued and how many consumers would use these deals, on a series of 7-point scales (1=*very few*, 7=*a lot*),

## **Results and discussion**

The redemption window of the deal affected participants' desire to purchase the deal such that, on average, participants decided to buy 1.43 (out of 2) deals when they were to be redeemed within a month, compared to only 1.07 (out of 2) deals when they were to be redeemed within six months ( $t(83) = 2.15, p = .034$ ), consistent with our predictions. Further, participants experienced more guilt and negative affect overall when the deals had a longer as opposed to a shorter redemption window ( $M_{\text{short}} = 2.14$  vs.  $M_{\text{long}} = 2.86, t(83) = 2.92, p = .004$ ). As expected, anticipated negative feelings associated with using the deal mediated the effect of the redemption window on the likelihood of taking a deal (the indirect effect was significant, and the confidence interval excluded zero;  $\beta = -.17, 95 \text{ CI: } -.40 \text{ to } -.037$ ).

Finally, speaking against perceptions of scarcity as a possible explanation for the preference for deals with shorter redemption windows, we did not find any effects of the redemption-window condition on the measures of a deal's scarcity ( $ps > .28$ ).

These results provide additional evidence that consumers prefer shorter to longer redemption windows for deals involving indulgent products, and this effect is driven by the anticipated negative affect, such as guilt, associated with the use of deals with longer redemption windows. The next two studies replicate this effect and test whether a preference for short versus long redemption windows is unique to indulgent deals, as we propose. Specifically, we selected

(based on a pretest) a service provider—Starbucks—that offers indulgent as well as utilitarian products. We varied between subjects whether the deal was offered with a short or long redemption window and whether it was for a relatively utilitarian use (coffee) or for a relatively indulgent use (pastries). Using the same service provider for both indulgent and utilitarian deals also allows us to address potential concerns that certain types of retailers (e.g., more popular) are more likely to offer indulgent (and not utilitarian) deals or are more likely to offer deals with shorter (vs. longer) redemption windows, an alternative explanation for the results of Study 1. Finally, in the next study, we measured participants’ perceptions of frequency of products’ use. If consumers generally consume indulgent goods more often than utilitarian goods, this observation would potentially explain why consumers would prefer shorter redemption windows for such products.

### **Study 3: Deals for Hedonic vs. Utilitarian Products from the Same Retailer**

#### **Design**

Undergraduate participants ( $N = 299$ ) completed this study in exchange for course credit. We randomly assigned them to one of the cells in a 2 (redemption window: 1 month vs. 6 months) x 2 (deal: hedonic product vs. utilitarian product) between-subjects design. We asked participants to evaluate a daily deal offered by a “Groupon-like website” (Figure 6). Specifically, we told them Starbucks was offering a daily deal “50% off (pay \$5 to get \$10)” for coffee (utilitarian product) or for pastries (indulgent product). A pretest ( $N = 117$ ) confirmed that pastries are seen as more hedonic than coffee. Using a 7-point scale (1=*utilitarian product*, 7=*indulgent product*), participants reported that a pastry from Starbucks is more indulgent ( $M = 4.56$ ) than a coffee from Starbucks ( $M = 3.87$ ,  $t(116) = 3.18$ ,  $p = .002$ ). Further, in another pretest ( $N = 56$ ), participants judged Starbucks as an attractive company on a scale from 1 (*not at all attractive*) to 100 (*extremely attractive*), with a mid-point of 50 (*moderately attractive*) ( $M = 63.44$ , significantly different from mid-point,  $t(54) = 3.36$ ,  $p = .001$ ).

Importantly, we manipulated the length of redemption window between subjects. The deal had to be redeemed within one month (short window) or six months (long window). Participants were asked whether they wanted to buy the deal (yes or no). On the following page,

we also asked how much participants liked Starbucks (1=*not at all*, 7=*very much*) and how often they visited Starbucks to purchase coffee (pastries) (1=*never*, 7=*daily*). We used a more precise measure of guilt associated with using the deal, by asking participants how much of an indulgence they perceived this deal to be (1=*not at all indulgent*, 7=*very indulgent*) and how guilty they would feel using this deal (1=*not at all guilty*, 7=*very guilty*). We combined the last two measures to form an index of the deal's indulgence.

## **Results and discussion**

### *Manipulation checks*

We found no effect of the manipulated variables on the liking of Starbucks ( $F_s < 1$ ): consistent with the pretest, participants rated Starbucks highly ( $M = 5.22$ ). Further, we found only a main effect of product type on the frequency of product usage ( $M_{\text{coffee}} = 2.97$  vs.  $M_{\text{pastry}} = 2.36$ ;  $F(1, 295) = 14.31, p < .001$ ; other  $F_s < 1$ ). Note that this effect is in the opposite direction to the observed preference for shorter redemption windows for indulgent (vs. utilitarian) deals and thus cannot explain our findings.

### *Likelihood of buying a deal*

We ran a logistic regression analysis with a redemption window, product type, and their interaction as independent variables and the choice to buy the deal as a dependent variable. As expected, the product type and redemption window jointly determined the likelihood of buying a deal ( $\beta = -1.23, z = -2.01, p = .044$ ). Specifically, we found no difference in the number of participants buying a deal for utilitarian products based on the length of the redemption window (81% for a short window and 86% for a long window,  $p > 1$ ). However, consistent with the findings of Studies 1 and 2, more participants chose to buy the deal for an indulgent product when it was offered with a shorter (87%) versus a longer redemption window (74%,  $z = -2.02, p = .043$ ).

### *Mediation by perceptions of deal's indulgence*

A 2x2 ANOVA on the deal's indulgence revealed an effect of the product type ( $F(1, 295) = 10.6, p = .001$ ). Confirming our manipulation of indulgent and utilitarian nature of the deal, participants saw a deal for coffee as less indulgent ( $M = 3.12$ ) than a deal for pastry ( $M = 3.61$ ). Further, an expected interaction between product type and redemption window emerged ( $F(1, 295) = 6.92, p = .009$ ). Although no difference emerged in perceived indulgence of the deal

between two product types when the redemption window was short ( $M_{\text{coffee}} = 3.34$  vs.  $M_{\text{pastry}} = 3.43$ ,  $F < 1$ ), participants perceived a deal for pastries as significantly more indulgent than a deal for coffee when the redemption window was long ( $M_{\text{coffee}} = 2.87$  vs.  $M_{\text{pastry}} = 3.77$ ;  $F(1, 295) = 17.1$ ,  $p < .001$ ).

We used biased-corrected bootstrapping ( $n=5000$ ) to test whether the differences in perceived indulgence of the deals for pastries versus coffee affected the deal's acquisition rate (model 8; Hayes, 2013). Supporting our theory, we found a significant overall moderated mediation effect ( $\beta = .28$ , [.061 to .66]). Although we found no indirect effect of the deal's indulgence on the deal's acquisition in the short-redemption-window condition ( $\beta = -.03$ , 95% CI: -.10 to .21), the indirect effect was significant in the long-redemption-window condition ( $\beta = -.31$ , 95% CI: -.10 to -.66), consistent with our propositions.

We replicated these findings with a different sample (participants recruited via Mechanical Turk,  $N = 211$ ) and using a slightly different dependent measure: how likely participants were to take advantage of this offer (1=*not at all likely*, 7=*very likely*). Replicating the results of Study 3, we find an interaction between the type of the product and the length of the redemption window ( $F(1, 210) = 6.85$ ,  $p < .01$ ). When the redemption window was long, participants preferred a utilitarian to an indulgent deal ( $M_{\text{coffee}} = 4.92$  vs.  $M_{\text{pastry}} = 3.98$ ,  $F(1, 210) = 8.36$ ,  $p = .004$ ); however, the opposite was directionally true for a short redemption window ( $M_{\text{coffee}} = 3.98$  vs.  $M_{\text{pastry}} = 4.3$ ,  $p > .2$ ).

These findings provide converging evidence that the preference for short versus long redemption windows depends on the nature of the product: indulgent versus utilitarian. Further, it provides evidence that consumer perceptions regarding a deal's indulgence can negatively affect sales of deals with long duration windows. Importantly, consistent with our theory, these findings suggest that a suboptimal preference for shorter redemption windows is unique to indulgent products and is not observed for utilitarian deals.

In the next study, we use a within-subjects study design to test whether consumers would be more likely to choose shorter redemption windows for indulgent than for utilitarian deals. Specifically, in this study, our dependent measure was the length of redemption windows contingent on the indulgent or utilitarian (manipulated between subjects) nature of the deal.



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## Design

Undergraduate participants (N = 107) completed this study in exchange for course credit. We randomly assigned them to one of two cells: deal for an indulgent product, or deal for a utilitarian product. We asked participants to evaluate a daily deal offered by a “Groupon-like website.” Specifically, we told them Starbucks was offering a daily deal “50% off (pay \$5 to get \$10)” for coffee (utilitarian product) or for pastries (indulgent product), similar to Study 3. Unlike in Study 3, we asked the participants to indicate the length of the redemption window they preferred for this daily deal on a 7-point scale (1=*one month*, 7=*one year*), with a middle-point labeled *six months*. On the following page, we also asked how often participants visited Starbucks to purchase coffee (pastries) (1=*never*, 7=*daily*) and how guilty they would feel using this deal (1=*not at all guilty*, 7=*very guilty*).

## Results and discussion

### *Manipulation checks*

Confirming our manipulation of the indulgent and utilitarian nature of the deals, participants felt less guilty consuming coffee ( $M = 1.71$ ) than pastries ( $M = 2.34$ ;  $t(103) = 2.01$ ,  $p = .047$ ). Consistent with Study 3 results, participants also reported visiting Starbucks more often to buy coffee than desserts ( $M_{\text{coffee}} = 3.30$  vs.  $M_{\text{pastry}} = 1.98$ ;  $t(104) = 4.72$ ,  $p < .001$ ). Again, this effect is in the opposite direction to the observed preference for shorter redemption windows for hedonic (vs. utilitarian) deals.

### *Choice of redemption window length*

As expected, participants were more likely to select a shorter redemption window when they were considering a deal for a more indulgent product (pastries) than for a more utilitarian product (coffee;  $M_{\text{coffee}} = 4.89$  vs.  $M_{\text{pastry}} = 3.89$ ;  $t(104) = 1.93$ ,  $p = .057$ ). This effect replicates our findings and provides a more robust test for our propositions in a context where consumers can select which redemption period to use. Interesting, note that participants express preference for a redemption window for indulgent goods that is lower than the average redemption window of the seven months offered by retailers in Study 1.

In our final study, we use a data set from another major daily deals platform, Living Social, to provide further validity to our findings. Building on the findings from our laboratory

studies and expanding on the analysis of Study 1, we coded every deal in this data set for its hedonic versus utilitarian nature, to examine the effect of redemption window length on sales for these two types of products. Consistent with findings of Studies 3 and 4, we expect consumers to exhibit higher preference for deals with shorter redemption windows for indulgent products but not for utilitarian products.

### **Study 5: Analysis of Living Social Deals**

#### ***Data description***

For the analysis, we used a total of 2,349 LivingSocial deals were available between March 21 and July 3, 2011, from 20 major cities (data set from Byers, Mitzenmacher, and Zervas 2012). The data fields include the following: the duration of the deal, that is, how long the deal was available for purchase on LivingSocial ( $M = 2.55$  days); deal value, that is, the face value of the deal ( $M = \$158$ ); percent discount off the face value ( $M = 56\%$ ); number of deals sold (our main dependent measure,  $M = 548$ ); and the number of “likes” that the deal received on Facebook ( $M = 21$ ). The data set was supplemented with information on the key independent variable—the redemption window for each deal ( $M = 203$  days, or approximately 7 months), which we collected from the LivingSocial website. Finally, three coders, blind to the hypotheses, classified each deal type into either a hedonic or a utilitarian category (71% of the deals were hedonic). Average inter-coder reliability was high (89%), and disagreements were resolved by discussion.

Histograms plotted for each variable above revealed that the data distributions for face value, number of deals sold, number of likes, and redemption window were skewed/covered a wide range of values. Hence, we log-transformed these variables for the purpose of the subsequent analysis.

Figure 7 visually summarizes the key variables in the data. Figure 7[a] reveals a decreasing pattern between deals sold and the face value of the deal, as one would expect. Similarly, Figure 7[b] reveals an increasing pattern between deals sold and the percent discount off face value offered on the deal. Figure 7[c] illustrates the positive association between

Facebook likes and sales for LivingSocial deals. Finally, Figure 7[d] plots deals sold against the length of the redemption window in days for all deal types, and suggests a slight positive association between the two.

### ***Results and discussion***

To understand the relationship between the various variables in our data, and to examine more carefully how the nature of the deal (i.e., hedonic vs. utilitarian) affects consumer response to different durations of the redemption window, we ran a regression analysis using the same model as in Study 1. We make the same assumption here that consumers are more likely to see highly liked hedonic deals as indulgent deals, and include an interaction term between Facebook likes and redemption window in the analyses to test the effect of deal's indulgence on sales.

We divided our data into two sets: one containing hedonic deals only, and the other containing utilitarian deals only. We then separately estimate the model for these two sets of data. We provide the results from this estimation in Table 2. We observe several main effects that are consistent with prior literature and findings of Study 1. First, as one might expect, we observe a negative association between the face value of the deal and deal sales. Given the log-log transforms of both sales and value, we can interpret this parameter estimate as the price sensitivity by deal type. Second, the percentage discount offered as well as the number of Facebook likes are positively associated with deal sales. Third, the deal duration has a negative association with deal sales; that is, deals that are kept alive on LivingSocial longer also tend to be the ones that sell less. (Table 2 follows References.)

Finally, the length of the redemption window is positively associated with sales for hedonic deals as well as utilitarian deals, although the association is only marginally significant for utilitarian deals. Importantly, a significant interaction between the attractiveness of the product/service and the redemption window for the hedonic deals only qualifies this effect (Figure 8). A spotlight analysis reveals, consistent with our earlier findings, that consumers were more likely to buy deals for highly desirable hedonic products when the redemption window was short versus long (+1SD:  $M_{\text{short}} = 1214.5$  vs.  $M_{\text{long}} = 798.8$ ,  $t(1657) = 9.61$ ,  $p < .001$ ), but the reverse was true for less desirable hedonic products (-1SD:  $M_{\text{short}} = 251$  vs.  $M_{\text{long}} = 453.7$ ,  $t(1657) = 5.50$ ,  $p < .001$ ). We observed no comparable effects for utilitarian deals (Figure 9).

These results replicate our experimental findings that the redemption window has a differential effect on the popularity of the deals sold on LivingSocial, depending on the nature of the deal: indulgent versus utilitarian. This effect is such that more indulgent deals tend to sell better when the window to redeem those deals is short rather than long, also consistent with our analysis of the deals sold on Groupon.

## **Conclusions and Discussion**

Daily deals platforms such as Living Social and Groupon offer consumers deep discounts for purchasing products and services to be redeemed in a pre-defined window of time. A priori, one would expect that all else equal, consumers should prefer less restrictive daily deals, so as to have more flexibility in consumption, especially in the face of uncertainty regarding future outcomes. In the context of redemption windows, the focus of this research, consumers should therefore prefer longer redemption windows to shorter redemption windows that may restrict consumers' ability to use the deal.

Interestingly, across several studies we observe that consumers systematically deviate from a preference for deals with longer redemption windows in favor of deals with shorter redemption windows, particularly for indulgent products. We provide evidence that this effect is driven by feelings of guilt and the negative affect associated with consumption of these products, and that anticipated guilt is higher for longer than shorter redemption windows. Importantly, this effect is not observed for utilitarian products and services. Our results are robust and replicated in experimental settings as well as in two data sets of actual daily deals sales.

From a managerial perspective, because the majority of the daily deals offered on Groupon-like platforms seem to promote indulgent consumption, our results suggest that providing consumers with more restrictive offers that limit the time to redeem the deal may in fact increase sales for retailers offering such deals and revenues for the daily deals platforms hosting such deals. This insight is important and potentially useful for retailers as well as deal platforms, because offering deals with shorter redemption periods can also mean offering additional benefits such as decreasing a retailer's associated financial liabilities.

From a consumer-behavior perspective, our findings contribute to the literature examining the desire to mitigate guilt from indulgent consumption as the driver of consumer behavior (Khan and Dhar 2012, Khan et al. 2005). We provide an interesting insight into how the time frame of consumption of daily deals can change consumers' perceptions of the anticipated guilt of indulgent consumption, and depress preferences for daily deals. Note that although our results may seem consistent with the findings on pre-commitment to indulgence (Keinan and Kivetz 2006, 2008; Kivetz and Simonson 2002), they are distinct. In fact, this literature states that consumers are more likely to indulge when they consider consuming in the distant rather than the immediate future, due to increased feelings of missing out. By contrast, we find that consumers are more likely to consume indulgent options when they come with a shorter time horizon for consumption. This finding suggests that although some consumers might suffer from hyperopia as identified in prior research (Keinan and Kivetz 2006), redemption windows of daily deals do not spontaneously activate such a focus. Future research should explore whether other features of the daily deals might change consumers' focus.

One of the novel features of daily deals is the social element of these deals, or the ability to buy the same deal with other consumers. Although we did not manipulate the social aspect of deals in our studies, consumers are likely to use this information as another justification for consumption of indulgent products. As recent research by Lowe and Haws (2014) demonstrates, consumers experience less guilt over indulgent consumption when they "co-indulge" with others. This finding would suggest a negative effect of long redemption windows for indulgent deals; that is, the effects observed in our work can be mitigated for products consumed in groups or with others. The joint effect of redemption window and the social element of consumption on the anticipated consumption guilt would be an interesting topic for future investigation.

Another interesting insight from the analysis of daily deals, specifically LivingSocial data reported in Table 2, reveals that consumers are differentially sensitive to hedonic versus utilitarian deals. For instance, the estimate for  $\log(\text{value})$  is significantly more negative for hedonic deals versus utilitarian deals. Given that the dependent variable in this analysis is  $\log(\text{price})$ , this coefficient estimate can be interpreted as price sensitivity, suggesting consumers are more price sensitive regarding hedonic versus utilitarian deals. Future research might want to further investigate in depth the differences in consumer responses to the many other covariates that characterize daily deals. We hope this work serves as a modest first step toward the

exploration of these issues as well as many others that help us better understand and design effective daily deals.

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Figure 1: Example of a typical daily deal

The image shows a Groupon deal for Lebanese Cuisine at Lebanese Taverna Restaurant. The deal is for \$10, a 50% discount from the \$20 value. The deal is limited time remaining and has been bought over 1,000 times. The deal includes a 'BUY!' button and a 'GIVE AS A GIFT' button. The deal is for a 'Date Night' or 'Girls Night Out'.

**Groupon** What are you looking for? Washington DC, DC

Home | Local | Goods | Getaways | Reserve | Freebies | Summer Tastes

**2 Days Only!** Check for New Sales Daily!  
Get an extra **20% Off** one local Body-Slimming deal. Enter **SLIM20** at checkout.  
Ends 5/20. Up to \$50 discount. Full details at [gr/pr/promofaq](#) **VIEW DEALS**

### Lebanese Cuisine at Lebanese Taverna Restaurant (Up to 50% Off). Three Options Available.

Bethesda

FROM **\$10**

**BUY!**

VALUE	DISCOUNT	YOU SAVE
\$20	50%	\$10

**GIVE AS A GIFT**

**Limited time remaining!**

LIMITED QUANTITY AVAILABLE  
**Over 1,000 bought**

**Date Night** **Girls Night Out**

Figure 2: An illustration of a redemption window associated with a daily deal

## The Fine Print

Expires 90 days after purchase. Limit 2 per person. May buy 1 additional as gifts. Limit 1 per table. Limit 1 per visit. Reservation recommended; not valid with Open Table. Dine-in only. Not valid for carryout. Not valid for delivery. Must use promotional value in 1 visit. Subject to availability. Valid only at Bethesda restaurant location. Merchant is solely responsible to purchasers for the care and quality of the advertised goods and services.

Figure 3: Select scatterplots from the Groupon data

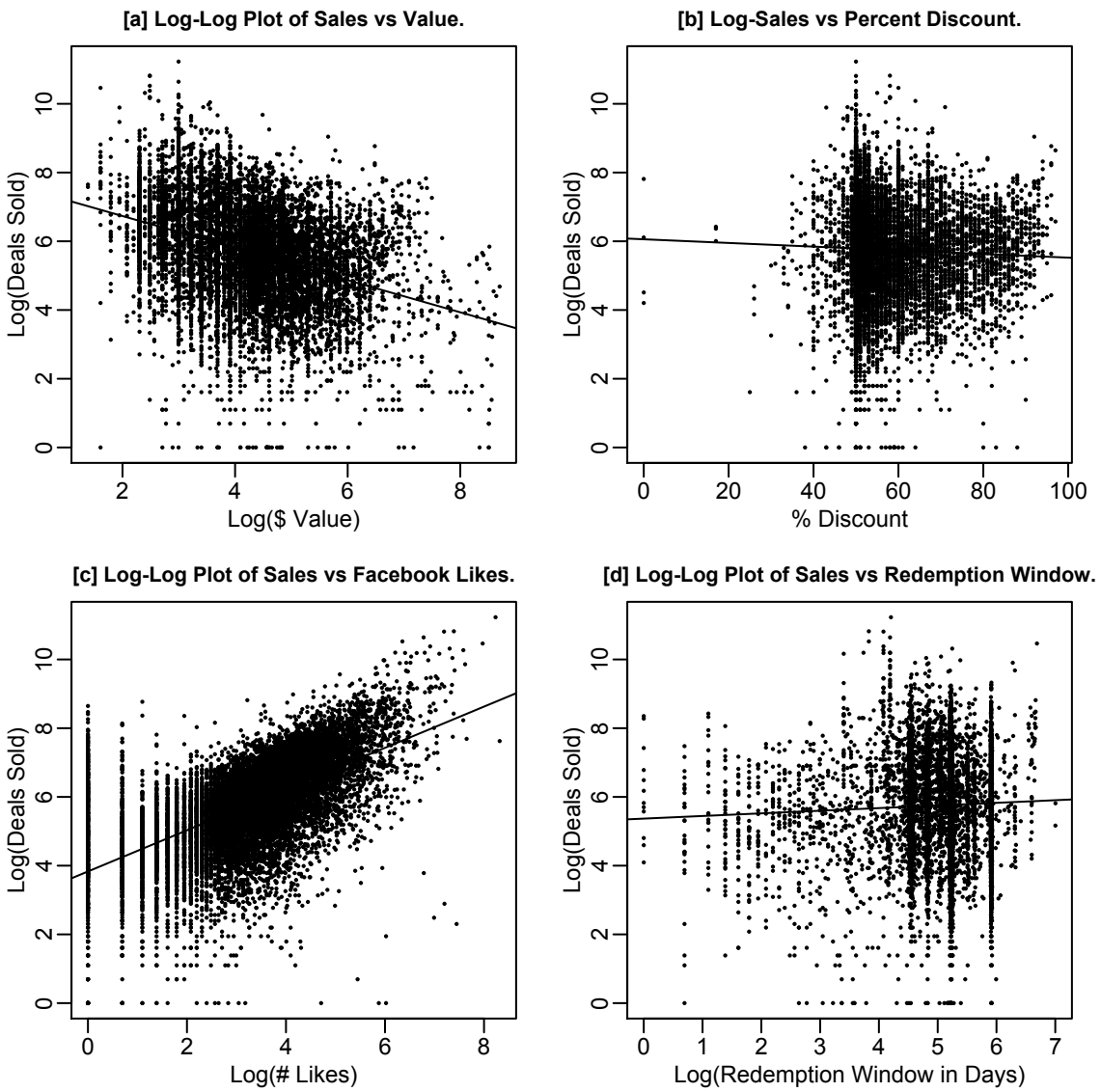


Figure 4: Number of deals sold on Groupon as a function of length of redemption window and Facebook likes

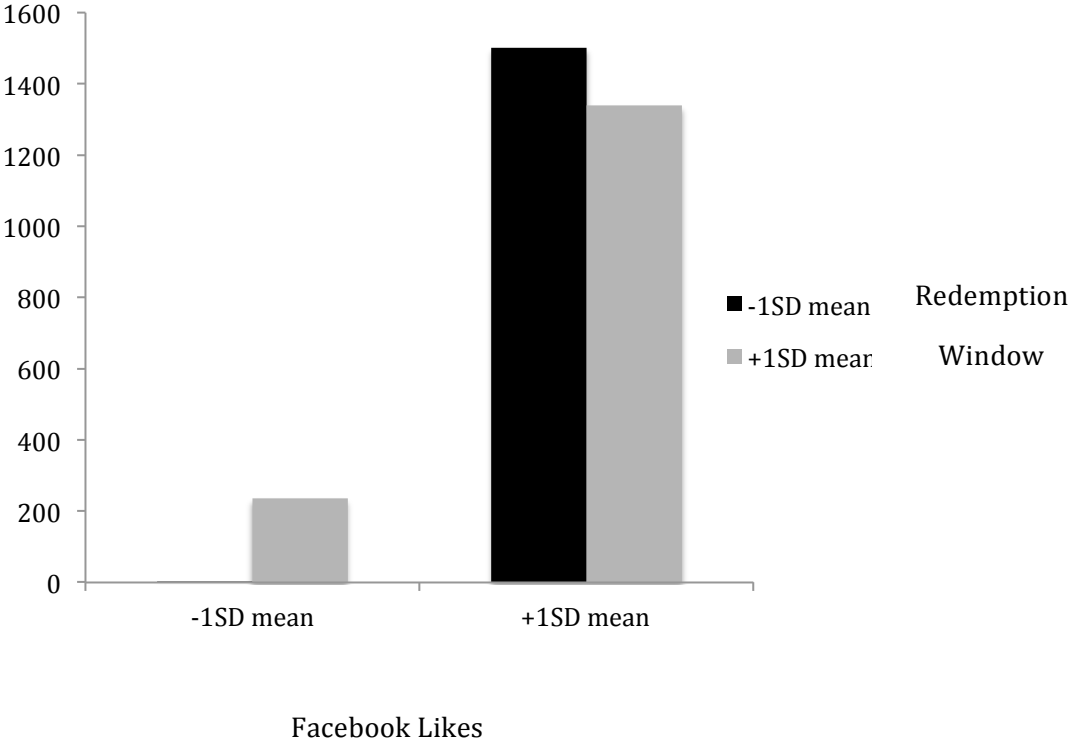


Figure 5: Materials used in Study 2 (1-month-redemption-window condition)

  
**\$2.50 for \$5 (50% discount)**  
**USE IT TO PURCHASE CANDY OR CHOCOLATES**  
\*Redeem within one month

Do you want to use this coupon?


Yes  
 No

  
**\$5 for \$10 (50% discount)**  
**USE IT TO PURCHASE MOVIES OR MUSIC**  
\*Redeem within one month

Do you want to use this coupon?

Yes  
 No

Figure 6: Materials used in Study 3 (1-month-redemption-window condition)




**\$5 for \$10 of Pastries at Starbucks**  
50% off any food item such as cakes, muffins and pastries.  
Use anytime during the next four weeks

Would you like to participate in this offer?

Yes

No



**\$5 for \$10 at Starbucks**  
50% off Drinks  
Use anytime during the next four weeks

Do you want to use this coupon?

Yes

No



Figure 7: Select scatterplots from the LivingSocial data

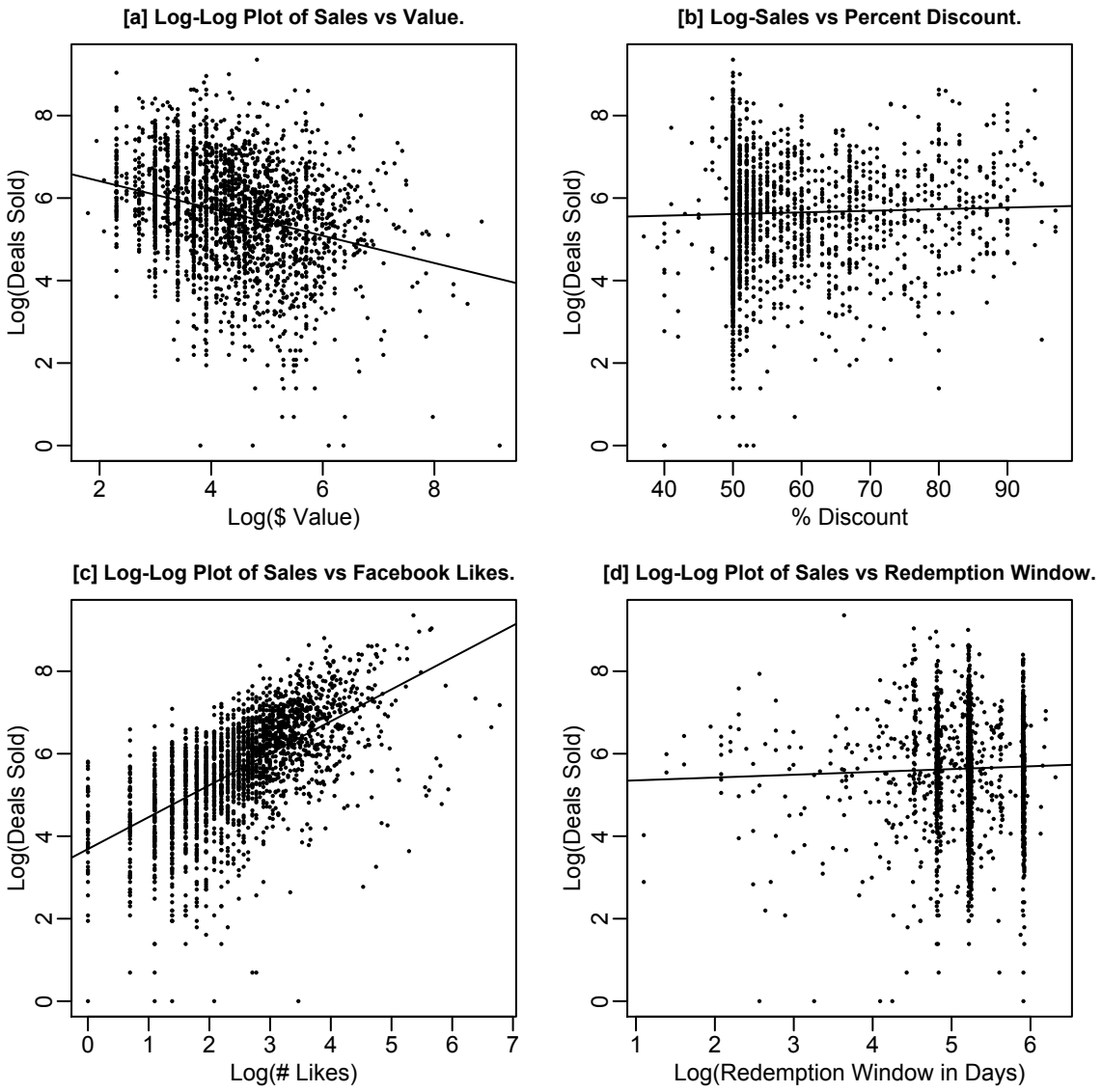


Figure 8: Number of deals sold on Living Social as a function of length of redemption window and Facebook likes (hedonic deals)

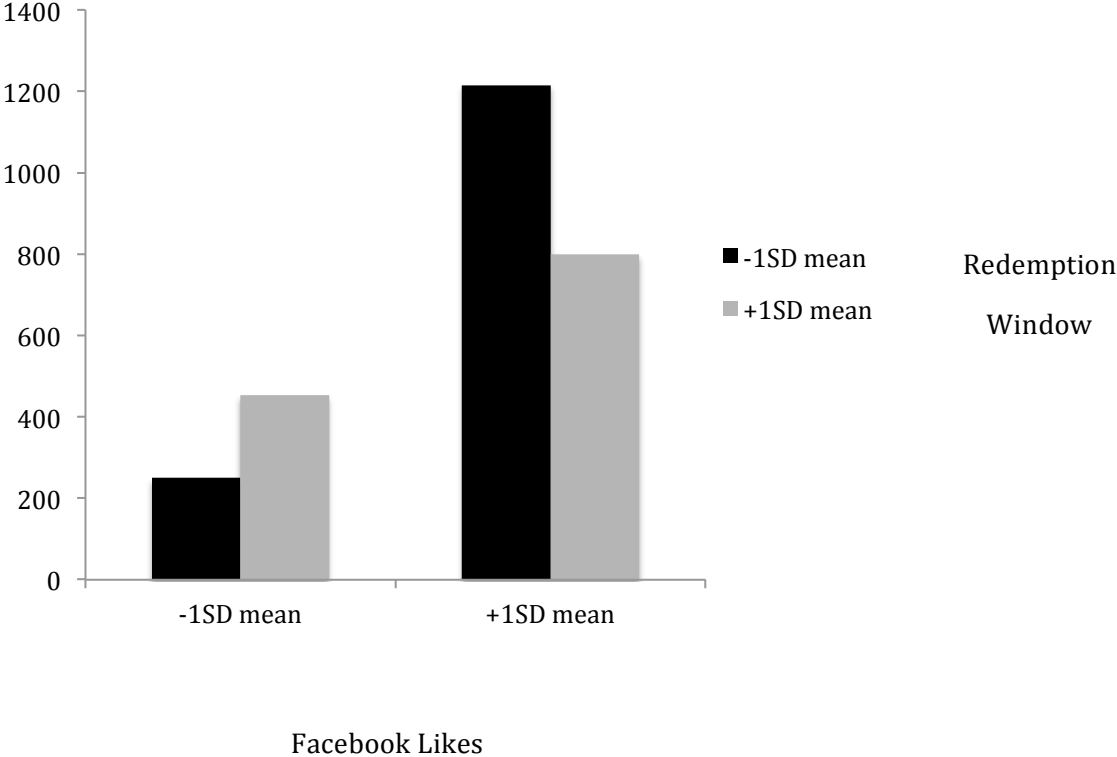


Figure 9: Number of deals sold on Living Social as a function of length of redemption window and Facebook likes (utilitarian deals)

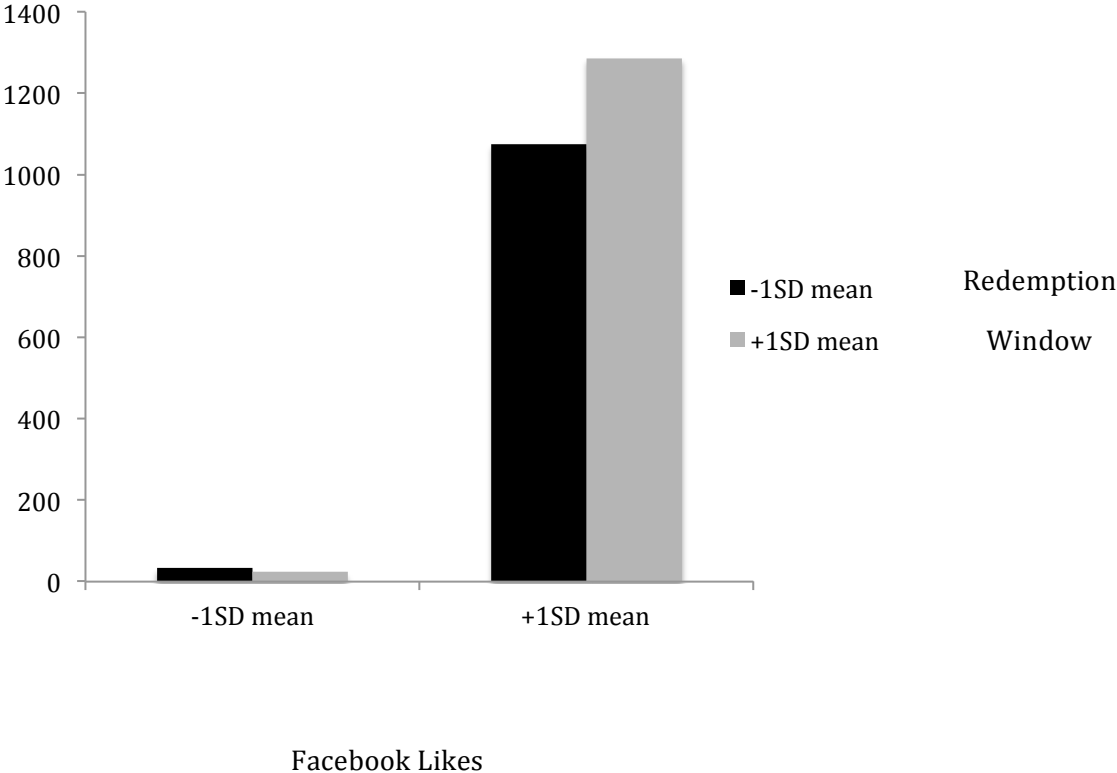


Table 1: Regression model results for the Groupon data

	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
<i>Intercept</i>	1.187	0.065	< 0.001
Log(Value)	-0.472	0.009	< 0.001
Percent_Discount	0.010	0.004	< 0.001
Deal_Duration	-0.003	0.001	0.005
Log(Redemption_Window)	0.355	0.028	< 0.001
Log(Likes)	0.767	0.038	< 0.001
<b>Log(Redemption_Window)</b> <b>*Log(Likes)</b>	<b>-0.086</b>	<b>0.017</b>	<b>&lt; 0.001</b>
Residual Std. Error	0.718		
df	12606		
Adj. R^2	0.515		

Table 2: Regression model results for the Living Social data

	Hedonic Deals			Utilitarian Deals		
	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>p-value</i>
<i>Intercept</i>	2.206	0.472	< 0.001	2.117	0.860	0.014
Log(Value)	-0.483	0.021	< 0.001	-0.244	0.042	< 0.001
Percent_Discount	0.025	0.003	< 0.001	0.020	0.003	< 0.001
Deal_Duration	-0.132	0.009	< 0.001	-0.144	0.018	< 0.001
Log(Redemption_Window)	0.453	0.089	< 0.001	0.260	0.160	0.104
Log(Likes)	1.208	0.152	< 0.001	1.012	0.311	0.001
<b>Log(Redemption_Window) * Log(Likes)</b>	<b>-0.071</b>	<b>0.029</b>	<b>0.016</b>	<b>-0.009</b>	<b>0.059</b>	<b>0.874</b>
Residual Std. Error	0.7856			0.8166		
df	1657			678		
Adj. R <sup>2</sup>	0.592			0.620		