INTMAR-00184; No. of pages: 20; 4C:

Available online at www.sciencedirect.com

ScienceDirect

Journal of Interactive Marketing 33 (2016) 57 – 76

JOURNAL OF INTERACTIVE MARKETING

www.elsevier.com/locate/intmar

Is the Daily Deal Social Shopping?: An Empirical Analysis of Customer Panel Data☆

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Abstract

Shortly after Groupon started its business in 2008, selling one deal a day with substantial price discounts, daily-deal sites became new online shopping places for many people. Starting with Groupon, most daily-deal sites required that voucher sales be higher than a predetermined number before deals become active. This feature, known as the "tipping point," was a unique characteristic of the daily-deal business and is identified as one of the most prominent features of social shopping. Most daily-deal sites also required that a redemption period start after a deal was over and be fixed, usually 90 days, presumably to maximize the promotional effect of deals by encouraging rapid voucher redemption. The question remains, however, whether such features actually contributed to the success of the daily-deal industry. Using individual-level panel data from a major daily-deal site in Korea, we analyze whether consumers' purchase and redemption behaviors were affected by these features and how consumers changed their behaviors as they continued to purchase and redeem vouchers over time. We find that the presence of the tipping point did not boost voucher sales and likely deterred new customers from buying deals right away. We also find that new customers tended to redeem their vouchers quickly, and this likely caused the small businesses that offered deals to become overwhelmed. It is not surprising, given our findings, that both Groupon and the Korean daily deal site abandoned the use of the tipping point and modified redemption rules.

Keywords: Social shopping; Online platform; e-Commerce

Introduction

In 2008, Groupon, an Internet startup company, enjoyed instant success by selling daily deals in a voucher format with heavy discounts, usually 50% or more. In addition to offering heavy price discounts, every Groupon deal required a predetermined minimum of sales to be active. If this minimum, which the literature calls a tipping point or threshold, was 100, for example, the deal would not be activated until at least 100 vouchers were sold. Once a deal became activated, the same discount rate applied to everyone who bought it, but if a deal failed to reach the minimum sales level by the deadline, it became void and those who had committed to buy the deal would receive their money back.

The tipping point is an example of a social shopping feature, where social shopping is roughly defined as a method of e-commerce that involves other people in a person's shopping experience, and Groupon relied on it to make their voucher business successful.[1] Andrew Mason, Groupon's first Chief Executive Officer, stated in a 2009 interview with Reuters, "The idea … was to organize action around a tipping point … If

☆ We are grateful to the participants at the 2012 Marketing Science Conference for their comments. All errors are ours.
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[1] See http://en.wikipedia.org/wiki/Social_shopping for details and see also Yadav et al. (2013) for discussions on the meaning and domain of social commerce.

http://dx.doi.org/10.1016/j.intmar.2015.12.001
1094-9968/

you can give people a way to take action where they feel it's actually going to make a difference, they'll do it."[2]

A number of daily-deal sites such as WagJag, BuyWithMe, and LivingSocial quickly entered the market in 2009, and many, if not all of them, used some sort of social shopping feature.[3] The first two companies adopted the tipping point feature, while LivingSocial, instead of using the tipping point, provided free vouchers when consumers sent a link to an offer to their contacts and three of those contacts bought the offer through the link. The daily-deal industry grew rapidly after 2009 with the annual growth rate close to 150%. As of 2014, more than 300 daily-deal sites were competing vigorously in the US market with total market revenue reaching 3.4 billion dollars (Carter 2014). However, the social shopping features that characterized early start-ups like Groupon began to disappear from these companies' business models, and as of 2012, Groupon was no longer using the tipping point in selling vouchers (Subramanian 2012).

It is debatable how much the tipping point contributed to Groupon's success and why this feature was ultimately eliminated. Some researchers claim it was essential, arguing that consumers enjoyed having an active part to play in making deals active and that this caused consumers to send links to their friends or even buy deals that they would not have otherwise. Wu, Shi, and Hu (forthcoming), for example, analyze Groupon sales data and find that the number of voucher purchases rapidly increased as deals approached the tipping point. They interpret this as consumers behaving in a frenzy to "beat the threshold". Other researchers, however, provide different perspectives on the role of the tipping point. Subramanian (2012), for example, uses an analytical model to show that the tipping point does not always benefit the daily-deal business. Edelman, Jaffe, and Kominers (2015) also question the role of the tipping point in the growth of the daily deal business.

In this paper we analyze some key features of Groupon-like daily deal sites, asking whether consumer behaviors are affected by these features and whether their behaviors change as they become more familiar with these features. In particular, we focus on two features. One is the tipping point, one of the most prominent social shopping features in the early daily-deal industry, and the other is a predetermined period for redeeming vouchers. The predetermined redemption period is not a social shopping feature per se, but it is one of the daily deal's important characteristics and closely related to its social shopping features. If a redemption period is 90 days, for example, a voucher loses its value if it is not redeemed in 90 days.[4] When the fixed redemption period is paired with the group buying feature of the daily deal business, i.e., inducing a mass of consumers to buy vouchers on the same day, an unpleasant redemption experience can result as multitudes try to redeem vouchers in a short period of time. Moreover, an unpleasant redemption experience is more likely to occur when a deal is offered by a small business. There are anecdotes about retailers complaining about dealing with "too many" customers right after deals are sold and consumers complaining about receiving poor service due to retailers trying to serve more customers than they can handle. For example, a consumer purchased a voucher for a spa from Groupon and then attempted to book a spa treatment, but she was told that there were no more spots left as too many people had already scheduled appointments. This customer could not use her voucher after all.[5]

In our analyses, we use individual-level data from one of the major daily-deal sites in Korea.[6] This company adopted the Groupon model, including the tipping point and the fixed redemption period features, and grew rapidly to become one of the largest daily-deal sites in Korea. Like Groupon this company also eliminated the tipping point feature a few years after its inception. For the tipping point effects, also known as the threshold effects, we first test whether and how the presence of the tipping point affects voucher sales. Using data on over 2,500 deals sold over a year, we analyze the sales patterns 30 minutes before and 35 minutes after deals are activated. In our data set we observe, among many other things, the exact purchase time of each consumer, and thus know exactly when deals were activated. For each deal we divide this 1 hour and 5 minute period into thirteen 5 minute intervals with a "threshold interval" in the middle. The threshold interval is a five minute interval that begins when deals reach the tipping point. If a deal reached the tipping point at 8:03:00 AM, for example, the threshold interval is from 8:03:00 AM to 8:07:59 AM and we include six 5 minute intervals before and after that interval. The dependent variable in this analysis is the log of the number of vouchers sold in each interval.

Knowing the exact times of the tipping points gives us at least two advantages over analyses that use data collected by "data crawlers" visiting company websites every five or ten minutes. First, we can test if any changes in sales patterns occur right before or after the tipping point rather than around the tipping point. In the example above we know that this deal was activated at 8:03:00 am, while the data collected by the crawler only show that the deal was activated between 8:00:00 AM and 8:05:00 AM. Wu, Shi, and Hu (2015), for example, find higher voucher sales around the tipping point, but they cannot pinpoint whether the higher sales happen right before or after the tipping point. Implications differ drastically depending on which is the case.

Second, we can control for the time effects of voucher sales, separately from the tipping point effect, using the clock interval.

[2] Andrew Mason, "Virtual 'Tipping Point' Leverages Group Deals," Reuters, June 10, 2009, http://www.reuters.com/article/2009/06/10/us-groupon-idUSTRE5592K720090610, accessed July 26, 2015.

[3] The business model of BuyWithMe is explained in a news article by Sam Oches entitled, "Coupon Companies Ditch Standard Format with Internet's Help," QSR, August 6, 2009, http://www.qsrmagazine.com/news/coupon-companies-ditch-standard-format-internets-help, accessed July 26, 2015. The business model of WagJag is explained in a news article at TechVibes.com entitled, "WagJag.com looks to leverage social media and save you money," TechVibes.com, March 31, 2010, http://www.techvibes.com/blog/wagjagcom-looks-to-leverage-social-media-and-save-you-money, accessed July 26, 2015.

[4] See The Daily-deal Industry section for a discussion of how the policy regarding unused vouchers has changed over time.

[5] Anonymous, "Groupon Complaint/Voucher Redemption," Measuredup.com, [2011], http://groupon-reviews.measuredup.com/Complaint-Voucher-Redemption-40928, accessed July 26, 2015.

[6] A disclosure agreement prevents us from revealing the name of the company or the specific periods we have data on.