

# Role of Word of Mouth in Online Store Loyalty

Comparing online store ratings with other e-store loyalty factors.

In the e-commerce realm, most price comparison Web sites such as pricegrabber.com and cnet.com also provide information regarding store ratings to their customers. These e-ratings are obtained from previous customers and are a credible source of information for current customers in the pre-purchase phase. However, it is not clear how important these ratings are to consumers as compared to other store attributes, such as site design, clarity of information, order tracking, on-time delivery, and customer service. Store managers responsible for allocating resources across different attributes need to know this in order to provide value to the customers visiting their site.

In traditional marketing, word of mouth (WOM) is the information one obtains through interpersonal communication with friends and family but in an online environment, store ratings are the

source of this interpersonal communication and are obtained from other consumers, not just friends and family. WOM has been studied extensively in traditional marketing [3] and MIS [4]. The MIS literature [1, 5, 6] has focused on building trust in the online environment to alleviate any risks associated with shopping online. Bowman and Narayandas measured WOM via a survey, and found WOM increases customer loyalty [3]. In the study reported here, we compare online store ratings with other determinants of e-store loyalty. We are also interested in learning how ratings influence online store loyalty across product categories.

## DATA

The data was collected from BizRate.com, an online price comparison Web site, and Alexa.com. Online shoppers use BizRate.com to compare prices of

an item across multiple online retailers. For each retailer, in addition to prices, Bizrate.com also provides information about aggregate customer ratings on a number of attributes. BizRate.com obtains the data for these customer ratings from two different sources. The first source is e-tailers that have allowed BizRate to collect feedback directly from their customers. The second source is a panel of over 1.3 million active online shoppers who have volunteered to rate online stores. BizRate.com determines the weighted averages of the customer ratings across the two sources, and these aggregate ratings for each store are displayed on the Web site.

After customers conclude a purchase, they are requested to complete a feedback form. Bizrate.com also conducts a follow-up email survey to obtain customer feedback regarding quality

of post-purchase services. Across the two surveys, the respondents are asked to rate the retailers on 14 e-store attributes as shown in the table here. The respondents must also provide an overall rating for each store, which is used by BizRate.com to determine the percentage of positive ratings for each store. This variable allows us to determine how the positive reviews provided by other consumers influence a consumer.

For each retailer, BizRate.com also provides information about the total number of customers that have reviewed that store. The respondents are also asked to state the likelihood of their shopping again at that store on a scale of 1 to 10. Consumer responses to this question became the dependent variable in our analysis.

**W**e collected data for 441 online retailers during late 2005.<sup>1</sup> One of the goals of this study was to determine whether the importance of store ratings would vary with product category. We collected data for retailers of three different product categories, such that two (DVDs and Videos, Books and Magazines) were standard and had very little variance in features and

Factors	Books and Magazines	DVD and Video	Flowers and Food
Relative Price	0.02	0.04	0.04
Ease of Finding	0.05	0.06	0.06
Selection	0.09	0.09	0.09
Clarity	0.13	0.07	0.07
Overall Look/Design	0.07	0.01	0.01
Shipping Charges	0.005	0.06	0.06
Variety of Shipping	0.04	0.06	0.02
Charge Statement	0.02	0.03	0.03
Number of Reviews	0.007	0.008	0.002
Years on the Web	0.005	0.003	0.005
Met Expectations	0.13	0.15	0.16
Product Availability	0.12	0.13	0.17
Order Tracking	0.13	0.13	0.15
On-time Delivery	0.19	0.16	0.17
<b>Percentage of Positive Ratings (Positive WOM)</b>	<b>0.25</b>	<b>0.24</b>	<b>0.22</b>

Note: The values in each of the cell represent the average contribution of the corresponding variable in predicting the repurchase likelihood at the e-store.

#### Average contribution of a variable in predicting repurchase likelihood across categories using dominance analysis.

quality, and the third (Flowers and Food) was non-standard and therefore had high variance in features and quality.

#### ANALYSIS

We sought to determine the importance of different store attributes in influencing the likelihood of repurchase. The simplest approach would be to conduct a linear regression analysis with the repurchase intention as the dependent variable and the stores' attributes as the independent variables, and then compare the standard coefficients. Unfortunately, all the independent variables are highly correlated, leading to the problem of multicollinearity.<sup>2</sup> The common

<sup>2</sup>To check for multicollinearity, we used variance inflation factors (VIF), which are the diagonal elements of the inverse correlation matrix. We found the VIF values of a few variables were above 10, showing there was a multicollinearity problem.

solution to the multicollinearity problem is to factor the independent variables into orthogonal factors. This approach meant that rather than studying the importance of store ratings, we would be able to study the importance of some factor made up of more than one store attribute.

We used dominance analysis [2] to compare the relative importance of different predictor variables. In dominance analysis (DA), the overall contribution of an inde-

pendent variable to the prediction of the dependent variable (repurchase intention in our case) in a multiple regression is determined by considering all possible subset selections of various models possible with the set of independent variables. One variable is said to dominate another if it is more useful than its competitors in all subset regressions. The DA approach provides the most general context by taking into account all relevant subset models, where a relevant model is either any subset model that can be formed from the predictors or any subset model that is theoretically possible and of interest. The average contribution of each variable in the various categories, computed after running the DA approach is reported in the table here. If this average contribution is high for any independent variable, it will imply that particular variable contributes more

<sup>1</sup>See [www.bizrate.com](http://www.bizrate.com) for a complete list and description of these attributes.

## It is interesting that of all the attributes, positive customer reviews have the greatest impact on repurchase intention.

toward predicting the repurchase intentions of consumers in that category.

We find a similar pattern of importance rankings across all the three categories. We find that positive word of mouth has the maximum impact on repurchase intention in all the cases. This is followed by on-time delivery and order tracking, suggesting the relative importance of different store attributes is not influenced by product category.


### CONCLUSION

It is interesting that of all the attributes, positive customer reviews have the greatest impact on repurchase intention. This is consistent across all categories. Even more impressive is the finding that number of years on the Web has the least impact on repurchase intention. This has significant implications for managers of online stores because it suggests that stores would attract more customers by having positive customer reviews. The amount of time the store has been in business does not seem to affect the repurchase intention of consumers. Another interesting finding is that it is not the total number of reviews that influences customer repurchase intention, but the per-

centage of positive reviews. This is important for new retailers that will have a lower number of total customer reviews than well-established retailers.

Our findings suggest managers can increase loyalty to their price comparison sites by providing customer review ratings. Interestingly, while most of the price comparison sites have started offering these ratings, many of them do not. A case in point is Froogle, Google's price comparison Web site, which does not provide customer ratings of stores. Froogle has not become widely used and we suspect one reason is because the site does not provide store ratings.<sup>3</sup>

Our finding may also explain paradoxes like Amazon.com having higher prices than Half.com and still performing better. The difference is that Amazon.com has customer reviews and Half.com does not. The chief executive and founder of Amazon, Jeffrey P. Bezos, also acknowledged this: "Word of mouth remains the most powerful customer acquisition tool we have, and we are grateful for the trust our customers have

placed in us. Repeat purchases and word of mouth have combined to make Amazon.com the market leader in online bookselling." 

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<sup>3</sup>According to Nielsen/NetRatings, Froogle had 6.6 million visitors in July 2006, lagging behind Shopzilla.com, the top shopping search engine, which racked up 17.2 million visitors, and Yahoo's shopping network, which had approximately 11.1 million.