



# The Fateful First Consumer Review




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# Observation: Inconsistency of Online Reviews

Product	Average rating		Number of reviews		Price	
	Amazon	Walmart	Amazon	Walmart	Amazon	Walmart
A 	4.0	> 2.2	303	> 4	79.00	= 79.00
B 	2.5	< 4.0	8	< 81	36.68	< 39.80
C 	4.2	> 3.0	328	> 2	80.99	< 89.99

What makes the sentiment different?



# Data

- All the vacuum cleaners with at least one review from both Amazon and Best Buy at the time of data collection (January 6, 2015).
  - This results in a total of 177 vacuum cleaner models in our data set.
  - For each of these products, the authors collect the number of reviews, the order of each review, the date each review was posted, the rating of each review, the review texts, and the price of the product from both platforms.
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# Initial Evidence: The First Review Matters

First Review		Average rating			Number of reviews			
Amazon	Best Buy	Amazon	Best Buy	Difference	Amazon	Best Buy	Difference	Sample size
(+)	(-)	3.974	2.835	1.138***	66.143	14.952	51.190**	21
(-)	(+)	3.046	4.264	-1.218***	41.147	18.970	22.176*	34
(+)	(+)	4.099	4.386	-0.286***	92.216	35.108	57.108***	111
(-)	(-)	3.151	2.857	0.293	55.182	17.545	37.636**	11
All samples		3.823	4.083	-0.260***	77.011	28.525	48.486***	177

# Main Model Analysis

$$\begin{aligned} AR_{it}^j = & \beta_0^j + \beta_1 FNegative_i^j + \beta_2^j \ln(FDuration_{it}) \\ & + \beta_3 FNegative_i^j \times \ln(FDuration_{it}) \\ & + X_{it}^j \Gamma^j + \mu_i + \varepsilon_{it}^j \end{aligned}$$

- $AR_{it}^j$ : The average rating for product  $i$  at period  $t$  on platform  $j$  (Amazon vs. Best Buy).
- $FNegative_i^j$ : The valence of the first review of product  $i$  on platform  $j$ . (1 for negative and 0 for positive).
- $FNegative_{it}$ : Time from the first review to period  $t$  (measured in monthly).
- $X_{it}^j$ : Control variables such as price, product types...
- $\mu_i$ : Potential differences between the products (e.g., product quality).


# Explanations

Here, the authors conjecture the first review affects the latter reviews a lot, this is captured by  $FNegative_i^j$ . In addition, it may also matter whether the first review was written a long time ago. The review of the product can also depend on such things as price, product type etc. Finally, even though we can observe price and product type, we cannot observe some factors such as quality that can also influence the rating.

	(1)		(2)	
	Estimate	Standard error	Estimate	Standard error
$\Delta F_{Negative}$	-1.314***	0.228	-1.313***	0.225
$\ln(FDuration)$	-0.122***	0.034	-0.120***	0.035
$\Delta F_{Negative} \times \ln(FDuration)$	0.412***	0.079	0.415***	0.077
$\ln(Price^A)$	-0.331	0.311	-0.340	0.310
$\ln(Price^B)$	-0.279	0.330	0.284	0.330
$\ln(WC^A)$	0.107	0.072	0.109	0.072
$\ln(WC^B)$	0.121*	0.066	-0.121*	0.066
Type handheld	-0.019	0.367	-0.007	0.370
Type robotic	0.060	0.379	0.068	0.379
Type stick	-0.097	0.321	-0.094	0.322
Type upright	-0.044	0.279	-0.046	0.280
Bagged	-0.335	0.293	-0.327	0.294
Corded	0.034	0.158	0.044	0.158
Search product <sup>A</sup>	-0.007	0.004	-0.013*	0.008
Search product <sup>B</sup>	0.007*	0.004	-0.013	0.009
Search brand <sup>A</sup>	-0.003	0.006	-0.004	0.007
Search brand <sup>B</sup>	-0.008	0.005	0.009*	0.005
First-review-independent volume <sup>A</sup>	0.081*	0.041	0.085**	0.042
First-review-independent volume <sup>B</sup>	0.015	0.030	-0.015	0.030
Month fixed effects	No		Yes	
Observations	1,488		1,488	
R <sup>2</sup>	0.2390		0.2467	



# Main Results

1. A product has a higher average rating after a positive first review than a negative first review.
  2. A product has a higher number of reviews after a positive first review than a negative first review.
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# Implications

1. A review platform may want to set up a policy where it suppresses reviews until the product receives a certain number of reviews so that consumers may see the reviews when the overall reviews reflect the true quality of the product.
  2. For consumers, reviews are biased. Don't rely too much on the reviews.
  3. For online sellers, you may pay special attention to the first a few reviews. You may even want to purchase your own products to create the first review on the platform.
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