STIVEN CATALYST

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MANAGEMENT REVIEW

Management without theatre.



KPIS

ONLINE RATINGS: WHAT A STAR IS WORTH

Half a star in Seattle, what a point is worth to a hotel, three things the average hides, the J that nobody chose, the fakes, and a card for reading the month's reviews.

11.2%

higher price a hotel could charge, at the same chance of being booked, with a review score one point higher out of five. Travelocity, 2012.

ANDERSON, 2012

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NO. 108 · KPIS

In this issue

Stars have become a KPI that the customer writes and the whole market reads. A manager is asked why the score fell from 4.4 to 4.2 and rarely asks how many people wrote, who they were, or whether some of them were real. This issue puts a price on a star, then takes the average apart.

In Seattle a star more on Yelp meant 5% to 9% more revenue for an independent restaurant, and nothing measurable for a chain. For hotels on Travelocity in 2012, a point more was worth an 11.2% higher price. But on Amazon most ratings are fives, with a smaller heap of ones; when a whole group rated one CD, the ratings were lower and in the middle. On Yelp about 16% of Boston restaurant reviews were filtered as suspicious. A monthly card closes the issue.

Stiven Janaqi EDITOR · STIVEN CATALYST

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HOW TO READ THIS ISSUE

Figure
Every figure has its source and year at the foot of its page.

Our reading
Where the editor interprets rather than the research, it says so.

Practice
The steps and the card are proposals to try, not research results.

COVER STORY

Half a star in Seattle

Michael Luca of Harvard Business School matched Yelp reviews with the revenue every restaurant in Seattle reported to the state tax office, 2003 to 2009: 3,582 restaurants. Yelp shows each average rounded to the nearest half star, so a 3.24 appears as three stars and a 3.25 as three and a half.

5–9%
more revenue for an independent restaurant per extra star, depending on the method

≈ 0
effect for chain restaurants: not significant

Comparing restaurants just either side of a rounding line, the extra half star alone raised revenue; scaled to a full star, about 9%. Diners reacted to the rounded number they saw, not only to the reviews behind it. By 2009 Yelp covered 70% of Seattle's restaurants; the city's paper had reviewed about 5%.

OUR READING

The rounding line is arbitrary, and the money followed it. A displayed number is a decision for the customer.

Source: Michael Luca, Harvard Business School, 2016

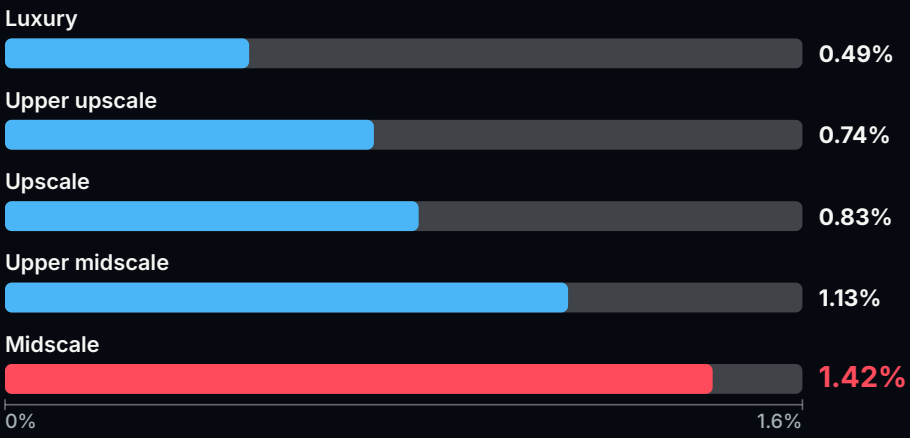
Luca (2016), HBS working paper: quarterly revenue from the Washington State Department of Revenue; 5.4% from fixed effects, about 9% from restaurants within 0.1 star of a threshold. One city, data up to 2009; chains were about 5% of restaurants.

THE NUMBERS

What a point is worth to a hotel

Chris Anderson of Cornell's School of Hotel Administration studied 13,341 Travelocity bookings in nine US cities in July 2012. One point more on the five-point review score raised a hotel's odds of being chosen by 14.2%: enough to charge 11.2% more and be booked as often. Each place lower on the list cut the odds by 11.5%.

REVPAR CHANGE FOR A 1% BETTER ONLINE REPUTATION, BY HOTEL CLASS, 2010–2012



OUR READING

The less a guest can guess from the brand and the price, the more the reviews decide. In midscale the gain was nearly three times that of luxury.

Source: Chris K. Anderson, Cornell University, Center for Hospitality Research, 2012

Anderson (2012): STR monthly data, January 2010 to June 2012, 11 cities in Europe and North America, against each hotel's competitive set; reputation is ReviewPro's index. Across all classes: price 0.80%, occupancy 0.20%, RevPAR 0.96%. Associations, old data; he notes much is not measured.

THE MODEL

Three things the average hides

An average of stars is a single figure built from three things the reader does not see: how many people wrote, how their ratings are spread, and who they were. Luca found that readers weigh the first and the last when they can see them.

01

How many

A rating change moved revenue 50% more with 50 reviews or more than with under 10.

02

The spread

Reviews pile up at five and one; the mean sits between two crowds.

03

Who wrote

Yelp's elite reviewers had about twice the effect; some reviewers are not customers.

EXAMPLE, INVENTED BY THE EDITORS

Hotel A, 10 reviews	all three stars: average 3.0
Hotel B, 10 reviews	five fives, five ones: average 3.0

Same average, two different hotels: one is ordinary for everyone, the other splits its guests. Only the spread tells them apart.

Sources: Michael Luca, Harvard Business School, 2016; Nan Hu, Paul A. Pavlou & Jennifer Zhang, 2007; Michael Luca & Georgios Zervas, Management Science 62(12), 2016

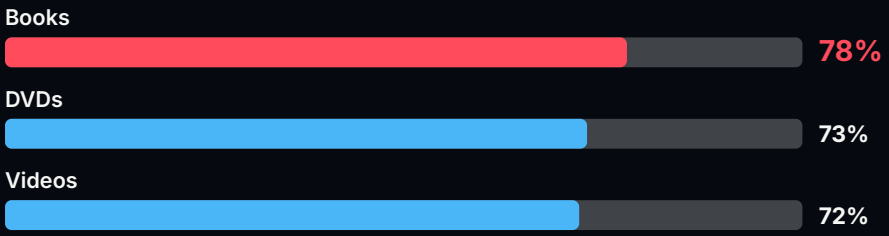
Cards: the editors' summary of Luca (2016, tables 9 and 10), Hu, Pavlou & Zhang (2007) and Luca & Zervas (2016). The 50% compares restaurants with at least 50 reviews to those with fewer than 10. The example is invented.

WHAT THE RESEARCH SAYS

The J that nobody chose

Nan Hu, Paul Pavlou and Jennifer Zhang collected Amazon reviews of 32,878 books, 17,978 DVDs and 28,983 videos in 2005. Ratings piled up at five stars, with a smaller heap at one and little between: a J. Then they gave one music CD to 66 students and asked every one of them to rate it.

SHARE OF AMAZON REVIEWS AT FOUR OR FIVE STARS, 2005



60 students answered. Their ratings formed a bell around the middle, mean 3.12; on Amazon the same CD averaged 3.54, with over 60% of reviews at one or five stars, against under 10% among the students. Most products also had few voices: 78% of the books had fewer than 20 reviews.

OUR READING

Those who buy already like the product, and those who write are the delighted and the angry. The ordinary customer mostly stays silent.

Source: Nan Hu, Paul A. Pavlou & Jennifer Zhang, 2007

Hu, Pavlou & Zhang (2007), working paper; Amazon data February to July 2005; bars are shares of all reviews in each category. The authors call the two causes purchasing bias and under-reporting bias. One CD and students: limits they name themselves.

HOW IT IS MEASURED

Count, spread, and the fakes

Michael Luca and Georgios Zervas studied 316,415 Yelp reviews of 3,625 Boston restaurants, 2004 to 2012. Yelp's filter had set aside about 16% as suspicious. Filtered reviews were more extreme; restaurants with few reviews or recent bad ones were more likely to commit fraud, chains less so.

79% : 19%

of reviews filtered at businesses caught soliciting fake reviews, against the average Boston restaurant

01	**Count**	how many this month, and the total behind the average
02	**Spread**	the share of ones and twos, and of fives, not only the mean
03	**Recent, not lifetime**	the month against the last three; the lifetime average moves slowly
04	**Who wrote**	filtered Boston reviewers had written 10 reviews on average, published ones 137

Source: Michael Luca & Georgios Zervas, Management Science 62(12), 2016

Luca & Zervas (2016), accepted version of 2015. The filter is a proxy for fakes, with errors both ways; the sting covered 126 US businesses flagged by Yelp in the 90 days to March 2014. The fields are the editors' proposal. Top-2-box is in No. 32, Goodhart's law in No. 43.

TOOL OF THE ISSUE

The monthly review card

Once a month, read the reviews as a complaint log, not a score: count them, look at the spread, sort the low ones by what went wrong and check whether the desk heard it first. The Guest Complaints tool turns categories into a Pareto and finds the rooms that complain twice.

01	**Month, platform, count**	new reviews this month; the total behind the average
02	**Average and spread**	share of ones and twos, share of fives; against the last three months
03	**What the low ones say**	in the guest's words, one category each
04	**Heard at the desk first?**	in the complaint log or not; if not, why not
05	**Fixed, and answered**	who fixes the cause, by when; who replies to the review

Sources: Michael Luca, Harvard Business School, 2016; Nan Hu, Paul A. Pavlou & Jennifer Zhang, 2007; Michael Luca & Georgios Zervas, Management Science 62(12), 2016

The card is the editors' proposal, not a tested method, built on the three sources' warnings about count, spread and who wrote. In the editors' view a review score should not become a staff target. The essay linked below gives the author's way of writing a complaint down in the guest's words.

More in the essay — The angry guest at 2 a.m.

Open the tool: Guest Complaints — stivencatalyst.com/tools/guest-complaints/

SOURCES AND METHOD

Every figure has a source.

The figures in this issue come from the sources below. The year shows how recent each one is.

Reviews, Reputation, and Revenue: The Case of Yelp.com (Working Paper 12-016)
Michael Luca, Harvard Business School, 2016
https://www.hbs.edu/ris/Publication%20Files/12-016_a7e4a5a2-03f9-490d-b093-8f951238dba2.pdf

The Impact of Social Media on Lodging Performance (Cornell Hospitality Report 12(15))
Chris K. Anderson, Cornell University, Center for Hospitality Research, 2012
https://ecommons.cornell.edu/items/d64bbbba-651a-4e13-a058-af3e2e82f4cf

Why do Online Product Reviews have a J-shaped Distribution? Overcoming Biases in Online Word-of-Mouth Communication (working paper)
Nan Hu, Paul A. Pavlou & Jennifer Zhang, 2007
https://archive.nyu.edu/bitstream/2451/14951/2/usedbook1.pdf

Fake It Till You Make It: Reputation, Competition, and Yelp Review Fraud
Michael Luca & Georgios Zervas, Management Science 62(12), 2016
https://doi.org/10.1287/mnsc.2015.2304

EDITORIAL METHOD

Each figure was checked for its year, its publisher and what it measures, in the full text where it could be opened. A source read only in a summary, an abstract or excerpts is marked “via”. A figure not confirmed in what was read is marked so on its page, or left out. The editor's interpretation is marked “Our reading”.



MANAGEMENT REVIEW

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Every issue, one management question, checked against the best research.

ALL ISSUES

stivencatalyst.com/magazine/management-review.html

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Edited by Stiven Janaqi, who answers for it; “the editors” in this publication means him. Its texts, translations, layout and the checking of figures against their sources are done in working sessions with Claude, an AI model by Anthropic.
stivencatalyst.com/how-this-is-made.html