A small difference in how ratings are displayed can unintentionally mislead consumers

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Research suggests ratings have become as crucial to purchasing decisions as factors like price, brand reputation or recommendations from family and friends, especially in terms of online shopping. Even a small increase of 0.2 in a rating can boost sales by 30 to 200%.

However, not all rating formats are created equal. Consider two hotels, both rated 3.5 out of five stars. One hotel displays its rating as a visual image of three stars with a fourth partially filled, while the other just lists the numerical score "3.5." Which one would you be more likely to choose?

My recent research study with my co-authors found that the way ratings are displayed—as stars versus numbers—can shape consumer perceptions in subtle yet predictable ways. Visual star ratings, fractional ones in particular, tend to appear more appealing to consumers than their number-rating counterparts.

We conducted a series of 12 experiments involving thousands of participants. In one, participants were asked to plot fractional numbers on an unmarked line; another tested how people visually process partially filled stars. In another experiment, respondents were given half ratings (like 1.5 or 2.5) and asked how they might round up or down, while another tested whether one format was more memorable than the other.

We found that fractional star ratings (a visual image of three stars with the fourth partially filled) tend to be overestimated by roughly 0.12 points, meaning a 3.5-star rating feels more like 3.62. In contrast, numeric ratings (like "3.5") are underestimated by about 0.05 points, making them feel close to 3.45.

These biases stem from different cognitive processes. Fractional star ratings trigger the visual-completion effect, in which the brain instinctively tries to complete the image. When people see a half-filled

star, their brains unconsciously perceive it as closer to a full star, effectively rounding the rating upward because it can't resist filling in the missing piece.

This process occurs automatically, without conscious awareness. This mental shortcut is a fundamental aspect of how humans see the world. It's what allows people to recognize familiar faces behind masks, identify logos from partial images and interpret obscured road signs. When applied to product ratings, this natural tendency can lead consumers to overestimate a product or service's true rating.

Numeric fractions, on the other hand, trigger left-digit bias where the brain anchors on the leftmost digit—the three in 3.5—causing perceptions to lean downward, instead of up.

While these biases may seem small, they can significantly influence where consumers decide to eat, stay or shop.

For businesses, star ratings can offer a subtle, often irresistible boost in perceived quality. Yet, exploiting this illusion comes with ethical implications.

Inflated ratings might drive short-term sales, but they risk damaging consumer trust over time. Take, for example, a hotel boasting a four-and-a-half-star rating. Such a score sets expectations of near perfection, and when reality falls short, customer disappointment can lead to critical reviews. In the digital age, such reviews spread quickly, potentially causing long-term damage to a company's reputation.

Negative online reviews can have enduring detrimental effects on both sellers and platforms. Research indicates that negative reviews can significantly decrease consumer trust and purchase intentions. In one study, consumers who encountered just one negative review were 41.8%

less likely to buy a product compared to when no negative feedback was present.

Transparency matters deeply in today's marketplace. Marketers and online rating platforms should carefully consider how their rating designs might unintentionally mislead customers. Honest ratings build lasting trust; misleading ratings erode it.

Our research has also identified practical solutions to the problem of misleading ratings. One simple yet effective approach is to use visually complete stars. Showing visually complete stars instead of partially filled ones dramatically reduces the tendency to round up. In fact, the overestimation of fractional ratings was reduced by 86% by replacing normal stars with visually complete stars.

Another effective approach is to prioritize numeric ratings, which have smaller biases. A numeric rating might cause a consumer to dismiss a quality establishment because a 3.5 feels closer to three than four. While this might lead them away from genuinely good choices, this distortion is less impactful than the significant overestimation triggered by partial stars.

Given how influential ratings are, standardization across platforms is crucial. Policymakers and industry bodies should consider establishing consistent standards, such as requiring visually complete stars or using numeric scores, to ensure fairness and transparency. This would enable consumers to make informed decisions and ensure businesses compete based on actual quality.

Small visual illusions can drive big changes in behavior, but by understanding and correcting these subtle biases, we can create a fairer digital marketplace. Clearer, standardized rating displays benefit everyone: consumers make better-informed choices, businesses are

rewarded for genuine quality and platforms build lasting consumer trust.

Next time you see a rating, pause for a moment and ask yourself: is this star rating nudging me toward an inflated expectation? Being aware of these subtle visual tricks can help you make better choices as a consumer and avoid disappointment.

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