

The Economic Value of Online Reviews

Measuring the Impact on Business Performance and Consumer Trust

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Consulting Consumer Reviews

The majority of consumers (6 out of 10) consult customer reviews before buying a product online, with Italians (65%) and Spaniards (61%) doing so more often than Portuguese (55%) and Belgians (50%).

The price of a product significantly influences whether consumers consult reviews; the higher the price, the more likely consumers are to check reviews.

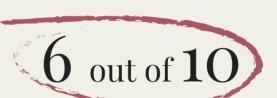
Household appliances and high-tech devices are the product categories for which customer reviews are most frequently consulted before purchase, while books are the least.

"I didn't feel the need to do so" was the primary reason cited by consumers for not consulting reviews.

The higher the price, the more likely consumers are to check reviews

The overall rating and the detailed text within reviews are the most valued aspects when consumers consult customer reviews.

A significant majority of respondents (78%) reported that **customer reviews played** an important role in their buying decision.



Check reviews
before buying online

Most consulted before purchase: appliances & tech Least: books



Trust in Reviews

// Most trusted: <u>expert sources</u> (51%) & <u>external expert sites</u> (44%)

high/very

// Least trusted: social media influencers (17%)

high/very high trust



75% say fake reviews hurt trust
63% believe fake review brokers exist

Despite concerns about fake reviews, 61% of respondents trust that verified reviews are genuinely from purchasers, and 52% are confident that online stores can filter out fake reviews. About 72% of consumers feel somewhat confident in detecting some fake reviews, though only 3% believe they can identify all fake reviews.



high/very high trust

OPINIONS ON CONSULTED CUSTOMER REVIEWS

// Most respondents (82%) found the reviews on their main source **useful**, and 78% found them **believable**.

// A significant majority of respondents (78%) reported that customer reviews played an important role in their buying decision.

MOST IMPORTANT ASPECTS WHEN CONSULTING CUSTOMER REVIEWS

The overall rating and the detailed text within reviews are the most valued aspects when consumers consult customer reviews.



MAIN CUSTOMER REVIEWS SOURCE

Customer reviews on the online store where the product was purchased are the most popular source of reviews across all countries, used by 53-68% of respondents.

Value of **Online Reviews**

The credibility of online stores and digital platforms positively influences consumers' perceived value of reviews, by bolstering perceived *trust, credibility, and usefulness* of the reviews.





The usefulness of a review positively influences its value, mediated by perceived trust and credibility, and this effect is more pronounced for consumers who can discern genuine from fraudulent reviews.

Posting Customer Reviews

3 out of 4 respondents reported having posted at **least one** customer review or rating for a product or service in the last two years.



In 2 out of 3 online purchases, consumers did not post a review.



Consumers are more likely to post a review when the product exceeded their expectations (64%) compared to when it was worse (45%) or in line (44%) with expectations.



92% of ratings are "good" (39%) or "very good" (53%)

Average rating: 4.4 / 5 globally



Those who read reviews before buying gave higher ratings (avg. 4.5) than those who didn't (avg. 4.3). Globally, 74% of respondents reported having posted at least one customer review or rating for a product or service in the last two years.

Restaurants and accommodations are the services for which consumers are most likely to write reviews.



Consumers are *more likely to leave a review* after a positive experience than a negative one.



Assessing the Value of Online Reviews from an Economic Perspective



The study's experiment suggests that **consumers are** willing to pay more for a product with verified reviews.

On average, the value of information provided by ratings backed by reviews for a product with a relatively high rating (4.7 stars), compared to the case there are no reviews nor rating is provided, has been estimated to be around 60 € for an item whose base price is 800 € (7.7% of the base value). When the reviews are "verified" (or declared such), this value increases, on average, by 37 € (a further 4.6%).

Information from reviews can both result in a confirm or a disconfirm of a high quality of a product. Because the individual has to take into account (probabilistically) both possibilities, the magnitude of the "value of information" is around 1/2 of the values above, so 3-4% of the price of the product for reviews and a further 2-3% when such reviews are verified.



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// Methodology

/ Survey sampling methodology

A survey was conducted to a **representative sample of the population aged 18 to 64** in Belgium, Italy, Portugal, and Spain. A common English questionnaire was first elaborated and afterwards it has been translated and adapted to the countries involved in this study. The fieldwork took place in **April 2024**, and a total of **4 216 valid responses** were considered for the analysis. As respondents were able to share their experiences with up to two products in the first part of the questionnaire, **8257 buying experiences** were collected across all the countries.

Samples were a priori stratified for the combined quota of gender, age, and geographical regions. Final response of correctly completed questionnaires was checked a posteriori and statistically **weighted for gender, age, geographical regions, and educational** level to be **representative for the respective national populations**. Quota were obtained from the National Institutes of Statistics and relate to the national universe of inhabitants between 18 and 64 years old.

/ Questionnaire design

In the first part of the questionnaire, respondents were able to share their experience with up to two products they had purchased online in the last 2 years. They could share their experiences on the online store where they bought the product, share their experience on consulting reviews, which aspects of the customer reviews were most important, to what extent they played an important role in their buying decision and to what extent the product matched to their expectations.

In the second part of the questionnaire respondents shared their experiences in general on customer reviews: how often they consult customer reviews, how they use customer reviews in their buying decisions, their opinions on customer reviews and whether they think to be able to discern whether a review is fake or not.

The third part of the questionnaire focused on consumers' experiences posting customer reviews: how often they posted reviews in the past two years, why they chose not to post a review and whether they review more often after a negative or after a positive experience.

Finally, the questionnaire included two experiments where respondents could choose between three options to test which aspects of customer reviews are most relevant to consumers in their buying decision.

The first experiment presented three televisions and tested both the presence of verified reviews and the presence of reviews in a context of differences in price. The first television was at a price of €899 with very good ratings and verified reviews, the second at €849 with the same ratings without verified reviews and the third at €799 without any reviews or ratings.

The second experiment presented three espresso machines and tested the importance of ratings compared to content of the reviews in a context of NO differences in price. The first espresso machine had a 4,2 average rating with rich information reviews, the

second had a 4,5 average rating but short reviews and the third had a 4,8 average rating but no written reviews.

/ Economic assessment methodology

Based on meaningful results of the survey, a twofold economic analysis has been developed to assess the value of online reviews. On one side, the study investigates upon the value generated by online reviews, under a business perspective. On the other side, under an economic (i.e., social welfare) perspective, the study tries to sketch a quantification of the online review value in terms of enhanced efficiency of the overall market system.

As for the business assessment, a regression analysis¹ enables to quantify the impact of various factors on consumer perceptions and behaviors regarding online reviews. Given the psychometric foundations of the questionnaire, such methods are exceptionally useful.² More specifically a so-called mediation and moderation analyses are conducted to shed light deeper into the dynamics influencing consumer behavior towards online reviews. Mediation analysis helps understanding the process through which an independent variable affects a dependent variable via a mediator variable, thereby revealing the underlying mechanisms at play.

As for the economic assessment, under an information theory framework, the study investigates upon the social value of information, or, in other words, the efficiency enhancements mechanisms that could be triggered by online reviews as information improving tools for buyers. This is benchmarked against the value obtained in a "perfect" exchange, i.e., (i) producing more accurate choices, (ii) avoiding adverse selection and (iii) encouraging the provision of higher-quality goods. On that basis it is ascertained how the willingness to pay is affected by the improved information and what is the value of that information, associated with different levels of perceived accuracy of consumer judgment.

¹As detailed in Hayes (2018). This approach was chosen due to its robustness in evaluating relationships between variables and its ability to control for potential confounders.

² As supported by additional literature, including studies by Raykov and Marcoulides (2011) and Tabachnick and Fidell (2019), psychometric approaches provide valuable insights into consumer psychology, enhancing our understanding of how online reviews influence purchasing decisions and overall consumer behavior.

// Results

BUYING EXPERIENCES

/ Online stores

Respondents were very positive about various aspects of the online store during their last online buying experience. Nine out of ten stated they were satisfied with the overall buying experience, and about the same proportion found the online store easy to navigate and well-designed. Additionally, 68% found the customer reviews published on the online store to be trustworthy, and 63% found it useful in their buying decision.

Agree with statements regarding the online store where they bought the product



The customer reviews on this online store are trustworthy

I trust this online store to secure my personal information well

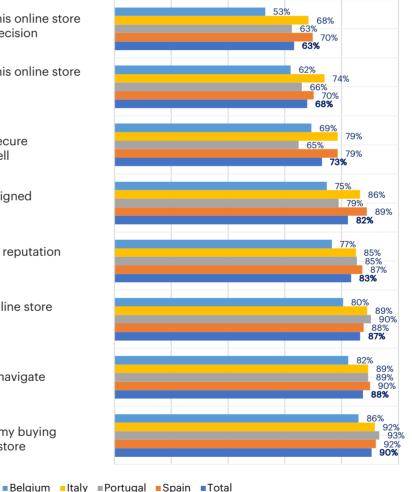
This online store is well designed

This online store has a high reputation

I would recommend this online store to friends and family

This online store is easy to navigate

Overall, I am satisfied with my buying experiences on this online store

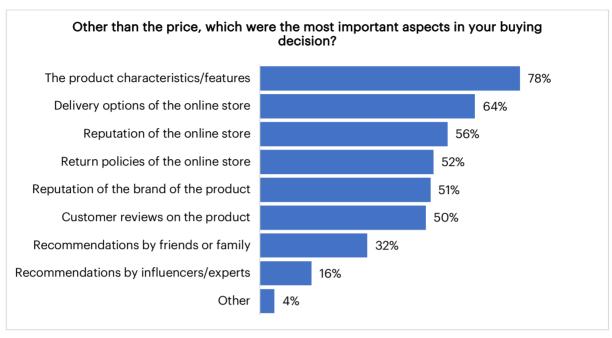


(Base: consumers who have bought on an online during the last 2 years)

A regression analysis showed that the variables that are more important in explaining (the (variance of) the overall satisfaction with the online store are the 'reputation of the online store' and the 'easiness of navigation on the store's website.

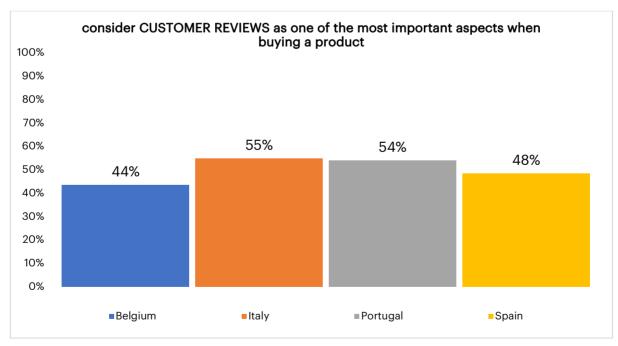
/ Most important aspects in the buying decision

When asked about the most important aspects in the buying decision (other than the price) the most mentioned one is the product characteristics and features.



(Base: consumers who have bought online during the last 2 years)

Customer reviews are mentioned as an important aspect by about half of the respondents.



(Base: consumers who have bought online during the last 2 years)

The price of the product has a clear influence on certain aspects, particularly on recommendations of friends and influencers/experts (the higher the price of the product, the more important the recommendations become). The same applies to the reputation of the brand and the product characteristics.

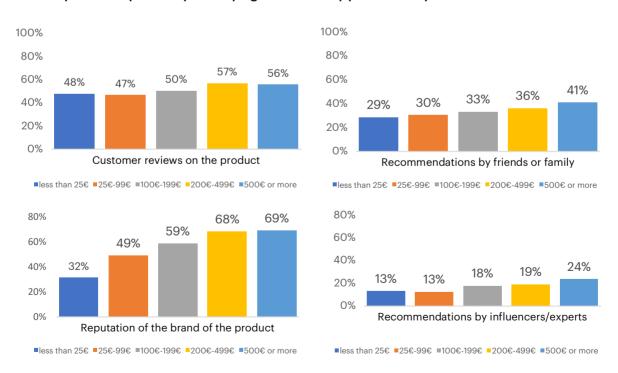
Differently from the other dimensions, delivery options of the online store do not become more important when the product price increases, but rather the opposite.

	PRICE OF THE PRODUCT				
Other than the price, which were the	<25€	25€-99€	100€-199€	200€-499€	500€+
most important aspects in your buying decision?	Col. %	Col. %	Col. %	Col. %	Col. %
The product characteristics/features	75%	76%	78%	84%	83%
Reputation of the brand of the product	32%	49%	59%	68%	69%
Reputation of the online store	52%	57%	56%	62%	56%
Customer reviews on the product	48%	47%	50%	57%	56%
Delivery options of the online store	67%	64%	64%	63%	62%
Return policies of the online store	50%	51%	55%	56%	53%
Recommendations by friends or family	29%	30%	33%	36%	41%
Recommendations by influencers/experts	13%	13%	18%	19%	24%
Other	4%	4%	5%	5%	5%
Total %	369%	391%	418%	451%	449%

(MULTIPLE RESPONSE QUESTION)

(Base: consumers who have bought online during the last 2 years)

Most important aspects in your buying decision - By price of the product



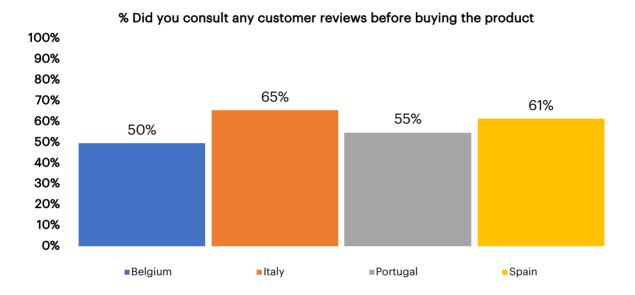
(Base: consumers who have bought online during the last 2 years)

CONSULTING CUSTOMER REVIEWS

/ Prevalence (last purchase)

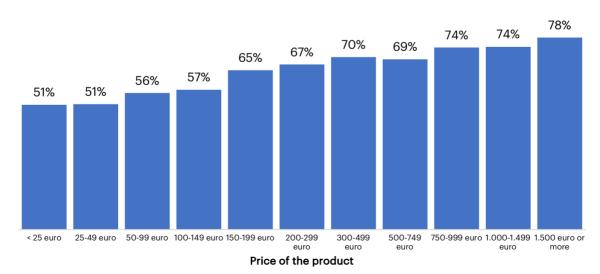
Considering all countries together, 6 out of 10 consumers have consulted customer reviews before buying a product online.

Italians (65%) and Spaniards (61%) did it more than Portuguese (55%) and Belgians (50%).

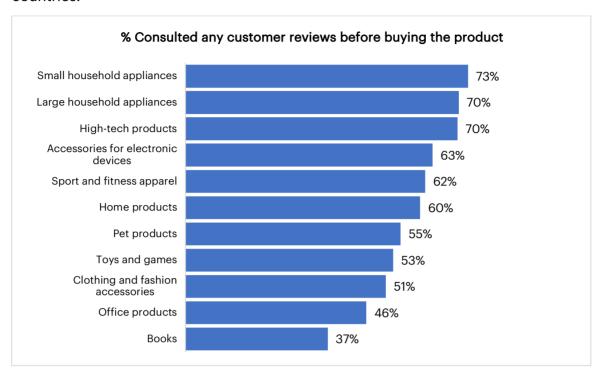


The price of the product appears to be a valuable predictor of customers' propensity to consult reviews. The higher the price of the product, the higher the % of consumers who consult customer reviews before buying it.

% Consulted any customer reviews before buying the product



By product type, household appliances and high-tech devices are the ones with the most customer reviews consulted before purchase. Books rank last across all countries.



(Base: consumers who have bought online during the last 2 years)

/ Reasons for not consulting customer reviews before buying

Among those who did not consult customer reviews, the main reason for not doing it was "I didn't feel the need to do so" (this valid to all the countries). Only 16% of people who did not consult customer reviews cited a lack of trust in customer reviews as their reason.

Why didn't you consult any customer reviews? (Multiple response)	
I didn't feel the need to do so	83%
I found enough information about the product in the online store	46%
 I find the product characteristics more important than the reviews (e.g., 4K for a television) 	35%
find the price more important than the reviews	20%
I don't trust customer reviews	16%
The product was so cheap I didn't care	16%
I didn't have time	7%
I couldn't find any reviews related to the product on the online store	7%
I couldn't find any reviews related to the product anywhere	4%
I didn't know where to look	4%
Other reason	5%
TOTAL	244%

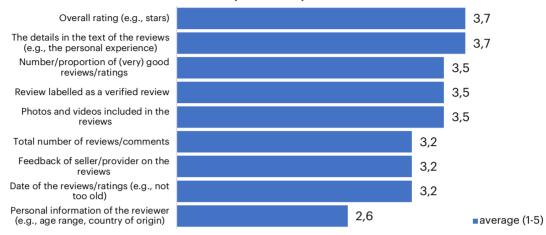
(MULTIPLE RESPONSE QUESTION)

(Base: consumers who have bought online during the last 2 years without consulting any customer review before)

/ Most important aspects when consulting customer reviews

The aspects that people value most when consulting customer reviews are the **overall rating** and the **details in the text** of the reviews.

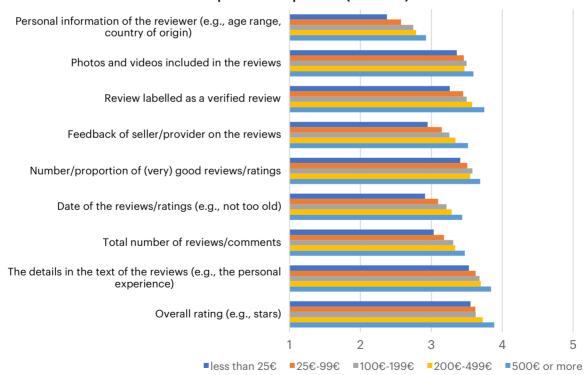
How important were each of the following aspects of the customer reviews to you in this purchase?



(Base: consumers who have bought online during the last 2 years and have consulted customer reviews before)

Consumers who purchased more expensive products tend to place greater importance on all aspects of customer reviews.

Importance of the aspect in your purchase BY price of the product (mean 1-5)



(Base: consumers who have bought online during the last 2 years and have consulted customer reviews before)

/ Main customer reviews source

Customer reviews on the website of the online store where the product was bought are the most popular source across all countries, with around 60-68% of respondents using this source.

Comparison websites/experience-sharing websites are the second most popular sources, particularly in Portugal (19%) and Belgium (17%).

Video streaming channels (e.g., YouTube) and social media (e.g., Instagram, TikTok) are less commonly used, with percentages below 10% in most countries.

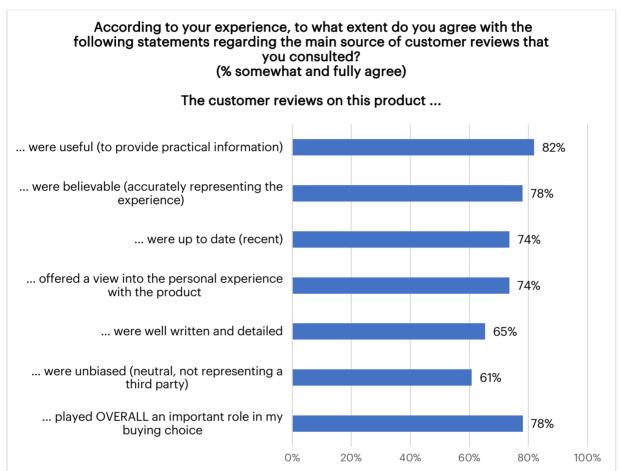
Other online stores and blogs are the least consulted sources, with very low usage across all countries.

What was the main source of customer reviews that you consulted for this product?	BELGIUM	ITALY	PORTUGAL	SPAIN	TOTAL
Customer reviews on the website of the online store where you bought it	53%	68%	62%	61%	61%
Customer reviews on a comparison website /experience sharing website	17%	12%	19%	9%	14%
Customer reviews on a video streaming channel (YouTube, etc.)	7%	7%	8%	13%	9%
Customer reviews on the website of another online store	13%	9%	3%	8%	8%
Customer reviews on social media (Instagram, TikTok, etc.)	8%	3%	6%	6%	6%
Customer reviews on a blog website	2%	1%	2%	3%	2%
Total	100%	100%	100%	100%	100%

(Base: consumers who have bought online during the last 2 years and have consulted customer reviews before)

/ Opinions on consulted customer reviews

82% of respondents reported that the reviews on their main source of customer reviews were useful, 78% of respondents that they were believable, and 74% that online reviews offered a view into the personal experience with the product. 61% think that the customer reviews consulted on their main source of customer reviews were unbiased, overall 78% of respondents reported that the customer reviews played an important role in their buying choice.



(Base: have consulted customer reviews last time they bought a product online)

A regression analysis was conducted to identify which variables are more important in explaining (the variance of) the variable "the reviews on this product played OVERALL an important role in my buying choice". The variables that show a higher influence are "...were useful", "offered a view into the personal experience with the product" and "were well written and detailed".

/ What you expected vs what you got

While most customers across these countries are satisfied with their purchases, there are slight variations in how expectations are met or exceeded.

Based on the reviews from their primary source, 78% of consumers found the product they bought in line with their expectations, while 18% found it better. Only 4% found the product worse than expected.

The percentage of customers who felt the product was worse than expected is low across all countries, with Belgium at 6%, Italy at 3%, Portugal at 4%, and Spain at 3%.

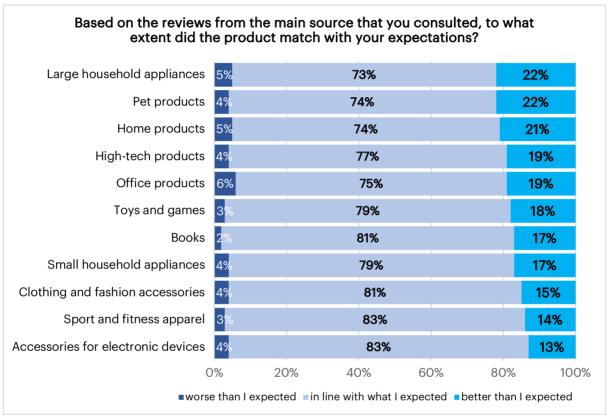
Portugal has the highest percentage of customers who felt the product met their expectations (84%), whereas Spain has the highest percentage of customers who felt the product exceeded their expectations (22%).

(Based on the reviews from the main source that you consulted) to what extent did the product match with your expectations?	BELGIUM	ITALY	PORTUGAL	SPAIN	TOTAL
• it was worse than I expected	6%	3%	4%	3%	4%
• it was in line with what I expected	74%	82%	84%	75%	78%
• it was better than I expected	20%	15%	12%	22%	18%
Total	100%	100%	100%	100%	100%

(Base: consumers who have bought online during the last 2 years and have consulted customer reviews before)

Large Household Appliances and Pet Products have the highest percentage of customers who felt the product exceeded their expectations (22%), while Accessories for Electronic Devices and Sport and Fitness Apparel have the lowest percentages (13% and 14% respectively).

The percentage of customers who felt the product was worse than expected is low across all product types, with Office Products having the highest percentage at 6%.



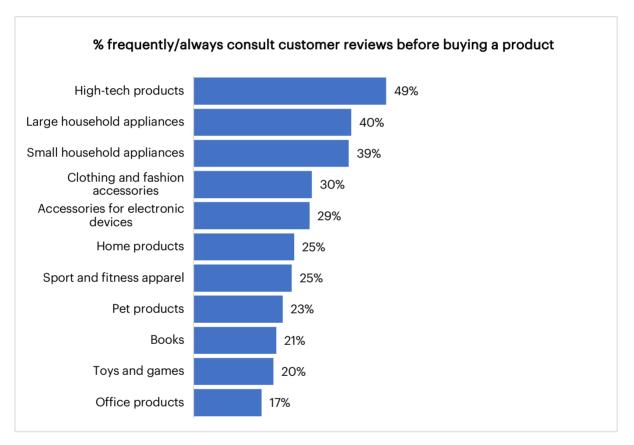
(Base: consumers who have bought online during the last 2 years and have consulted customer reviews before

/ Consulting customer reviews before buying a product in physical shops

Consumers were asked how frequently they consult customer reviews before buying a product in a **physical shop**. Results show variations by product type:

High-tech products have the highest percentage of consumers who frequently or always consult customer reviews before buying (49%), followed by large household appliances (40%) and small household appliances (39%).

Pet products (23%), books (21%), toys and games (20%), and office products (17%) have the lowest percentages of consumers consulting reviews.



(Base: consumers who have bought every type of product)

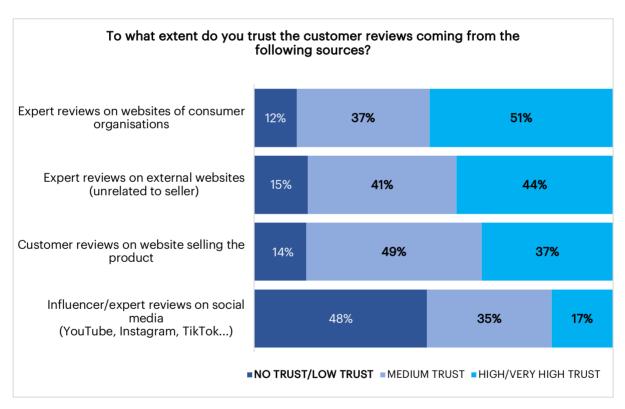
/ Trust in customer reviews

When asked about the trust they have on consumer reviews in general, not only related with their last buying experience, the data show that consumers place the highest trust in reviews from recognized and independent expert sources, while they are more skeptical of reviews associated with sellers or influencers on social media.

Expert reviews on websites of consumer organizations are the most trusted, with 51% of respondents indicating high or very high trust.

Expert reviews on external websites (unrelated to the seller) also receive a high level of trust, with 44% of respondents indicating high or very high trust. This is slightly higher than the trust placed in customer reviews on the website selling the product (37% high or very high trust)

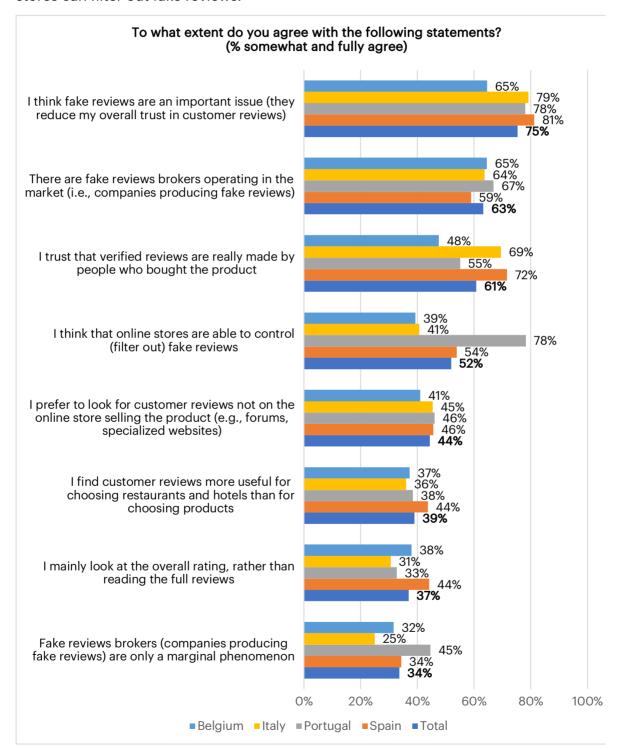
Influencer/expert reviews on social media platforms like YouTube, Instagram, and TikTok are the least trusted, with only 17% of respondents indicating high or very high trust. Additionally, 48% of respondents have no or low trust in these reviews, indicating significant skepticism towards reviews from influencers.



(Base: consumers who have consulted customer reviews)

/ Opinions on customer reviews in general

When asked about the issue of fake reviews, 75% of respondents agree that fake reviews are an important issue. 63% of respondents believe that there are fake reviews brokers operating in the market. However, 61% of respondents trust that verified reviews are really made by people who bought the product and 52% are confident that online stores can filter out fake reviews.



/ Fake reviews

75% of consumers agree that fake reviews are an important issue ("they reduce my overall trust in customer reviews"), and 52% think that online stores can control (filter out) fake reviews.

Consumers tend to trust on verified reviews: 61% agree that verified reviews are genuinely written by people who purchased the product.

When asked about their ability to discern fake customer reviews: 72% of consumers feel somewhat confident in detecting some fake reviews, only a small percentage (3 %) believe they can identify all fake reviews.

About one fourth of consumers report that they are unable to discern fake customer reviews.

Do you consider that you are able to discern whether customer reviews are fake?	Belgium	Italy	Portugal	Spain	Total
No, I can't	27%	24%	20%	28%	25%
Yes, some of them	68%	72%	78%	70%	72%
Yes, all of them	5%	4%	2%	2%	3%
Total	100%	100%	100%	100%	100%

(Base: consumers who have consulted customer reviews)

Particularly women and consumers aged 50 or older, feel less confident in identifying fake customer reviews.

When considering both gender and age, 43% of women and 28% of men aged 50-64 report that they are unable to discern whether customer reviews are fake.

ASSESSING THE VALUE OF ONLINE REVIEWS FROM A BUSINESS PERSPECTIVE

/ Focusing on Online stores/Platforms and Online Review Value

In the initial phase of our analysis, we concentrate on examining both the role and the features of the online reviews and the role of online stores and platforms. This focus stems from the pivotal role these actors play in consumers' decision-making processes. Online stores and platforms serve as critical intermediaries and facilitate the dissemination of consumer feedback contributing to overall transparency and the visibility and credibility of reviews. Consequently, understanding these dynamics is essential for comprehending how consumer opinions are formed and acted upon in online commerce.

The results of our statistical analysis revealed that the credibility of online stores and platforms positively influences consumers' perceived value of reviews. Indeed, on the basis of previous literature (e.g., (Cheung & Lee, 2012; Filieri, 2015; Hsiao & Chen 2017), the intrinsic value of an online review may be operationalized also thought individuals' intention to post such reviews. Similarly, Filieri (2015) importantly demonstrated that consumers' perception of review helpfulness motivates their contributions, aligning with Yoo and Gretzel (2008) study. This effect is mediated by consumers' perceived trust in, credibility of, and the usefulness of the reviews. Consequently, based on the above, the credibility of online stores and platforms may enhance the perceived value of the reviews by bolstering these mediating factors (see Figure 1 below).

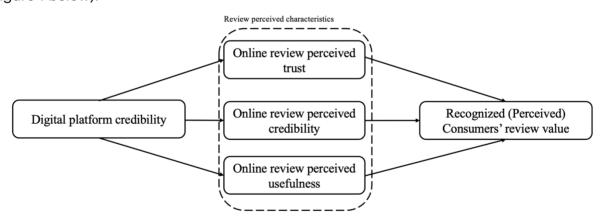


Figure 1. The mediator role of online reviews perceived trust, credibility and usefulness and its effect on review value.

Focusing on the intrinsic characteristics of the online review to assess its perceived value

In the second analysis we primarily concentrate on the characteristics of the review and the consumers' perceptions, which collectively shape the review's value. We propose that the usefulness of a review positively influences its value due to the consumers' perceived trust and credibility. However, the intensity of this effect may vary, as it is contingent upon the consumers' ability to discern genuine reviews from fraudulent ones. This discernment capability plays a crucial role in determining the extent to which the perceived usefulness (also explained by the effect of both perceived trustworthiness and credibility) of a review can enhance its overall value. Based on above, the reasoning behind our predictions is shown in the Figure 2 below.

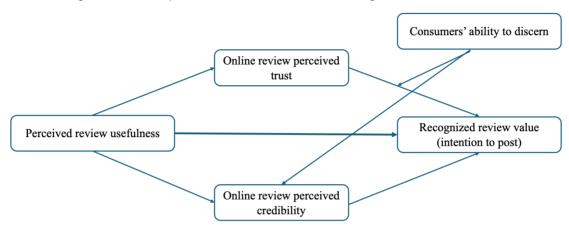


Figure 2. The proposed framework and the hypothesis

The main analysis has been conducted using the moderated-mediation model (n. 14) by Hayes (2018) that allows estimating the perceived review value as a function of its perceived usefulness (i.e., the independent variable, X), trust (Me₁) and credibility (Me₂), both measured as a continuous variable which served as mediators, and individual ability to discern real vs. fake review (measured as a continuous variable) which served as the moderator (Mo). Specifically, we assert that the utility of an online review positively influences its perceived intrinsic economic value to consumers. This effect is explained by both the perceived trust and the perceived credibility of the online review. Nevertheless, this effect is more pronounced for individuals who possess certain levels of discernment between genuine and fake reviews, with the moderation being pertinent only to perceived trust and not to perceived credibility. This is because the ability to discern is inherently an indicator of the capacity to distinguish between believing and disbelieving the review (see Figure 3 below).

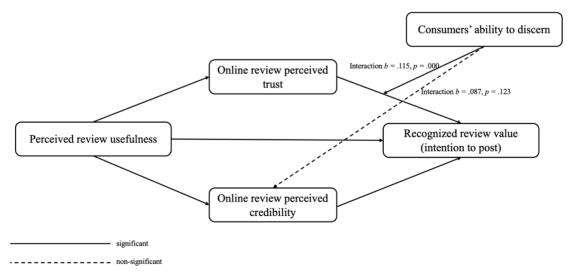


Figure 3. Results of the statistical analysis: Significant and non-significant interactions

/ Implications both for companies and for consumers of the analysis

The two approaches, focusing on two different perspectives, demonstrate that the credibility of the online stores and platforms significantly enhances the economic perceived value of online reviews, as evidenced by the positive effects of possible intention to post such reviews (indeed, we operationalized such a value as individuals' intention to post review, by leveraging on word-of-mouth literature; see Ismagilova et al., 2020 for a recent review of seminal works in this domain).

Crucially, the two analyses identify perceived trust, credibility, and usefulness of online reviews as antecedents that shape their economic value. Additionally, the interaction between the perceived usefulness of an online review and its economic value is mediated by perceived trust and credibility. This effect is notably more pronounced among consumers who think to be able to effectively distinguish between authentic and fake reviews, highlighting the necessity of tools that help consumers evaluate the "goodness of a review". These results may involve several managerial and consumers-related implications we detailed below.

IMPLICATIONS FOR COMPANIES

As for Managerial Implications, results are useful for 1) Enhancing Credibility: Businesses should invest in bolstering the credibility of their online stores and platforms. This can be achieved through transparent policies, robust verification systems, and partnerships with trusted third-party organizations. A credible online store/platform not only attracts more user engagement but also enhances the perceived economic value of the reviews posted on it.

Then, our results may be useful in 2) Building Trust and Transparency: trust is a fundamental antecedent to the perceived value of online reviews. Companies should focus on building and maintaining consumer trust through consistent and transparent communication, secure transactions, and reliable customer support. This can involve showcasing genuine customer testimonials, ensuring privacy protection, and promptly addressing any issues that arise. Moreover, since the value recognized, results indicate the relevance of better promoting 3) Promoting Review Usefulness: businesses should encourage and highlight the usefulness of reviews by implementing features that allow users to rate and comment on the helpfulness of each review. Providing detailed guidelines and templates for writing comprehensive and informative reviews can also increase their perceived usefulness.

When also considering the issue of real vs. fake review, results may suggest that some 4) Tools for Review Authenticity should be proposed, or when existing, boosted. Indeed, developing and integrating tools that help consumers discern the authenticity of reviews is critical. These tools can include AI-driven fake review detection systems, verified purchase badges and user education on recognizing genuine feedback. Ensuring consumers can trust the reviews they read will increase their overall satisfaction and engagement. Finally, when facing consumers, businesses should contribute to enhance 5) Consumers' Education and Engagement: importantly, educating consumers on the importance of posting and relying on authentic reviews can foster a more engaged and discerning user base. Workshops, webinars, and informational

content on how to write and evaluate reviews can empower consumers, leading to a higher quality of reviews and greater trust in the online store or platform.

CONSUMERS-RELATED IMPLICATIONS

Our results confirm that consumers benefit from online stores and platforms that prioritize review credibility and usefulness, as it enables them to make more informed purchasing decisions. A trustworthy review system reduces the risk of being misled by false information, thereby enhancing the overall shopping experience.

Thus, based on our results, firstly when facing consumers, it should be enhanced trust and satisfaction. When consumers can trust the reviews they read, their satisfaction with both the online store / platform and their purchases increases. This trust is built through consistent positive experiences facilitated by credible reviews and transparent business practices. In doing so, it's required their active participation in review systems, implying that consumers should be encouraged to actively participate in review systems by posting their own reviews and rating the helpfulness of others, to "holistically" stimulate peer-to-peer interactions. This active participation helps build a robust community of trust and reliability, benefiting all users of the online store or platform. By utilizing tools and resources that help discern the authenticity of reviews, consumers can feel more confident in their purchasing decisions. This empowerment leads to a more positive engagement with the online stores and platforms and reduces the likelihood of negative experiences. Concluding, the credibility of online stores and platforms and the perceived trust, credibility, and usefulness of online reviews are vital in shaping their economic value. Both businesses and consumers have pivotal roles to play in enhancing the trustworthiness and effectiveness of online review systems. Indeed, on one hand, by implementing strategic initiatives to bolster online store/ platform credibility and by fostering informed and engaged consumer participation, the overall ecosystem of online reviews can be significantly improved, leading to greater economic value and satisfaction for all stakeholders. On the other hand, some initiatives to support consumers in this kind of activities should be promoted in attempt to "cooperate" and contribute to increase not only the value of their purchases, but the value of the entire ecosystem.

POSTING CUSTOMER REVIEWS

/ Prevalence (last purchase)

In two out of three cases where consumers bought a product online, they did not share their experience by posting an online review.

Italians (40%) and Spaniards (38%) are more likely to post a review than Portuguese (34%) and Belgians (28%).

Did you rate/write a review on your buying experience?	Belgium	Italy	Portugal	Spain	Total
no	72%	60%	66%	62	65%
yes, but only a score/star rating	14%	19%	18%	17%	17%
yes, both a rating and a written review	14%	21%	16%	21%	18%
Total	100%	100%	100%	100%	100%

(Base: consumers who have bought online during the last 2 years)

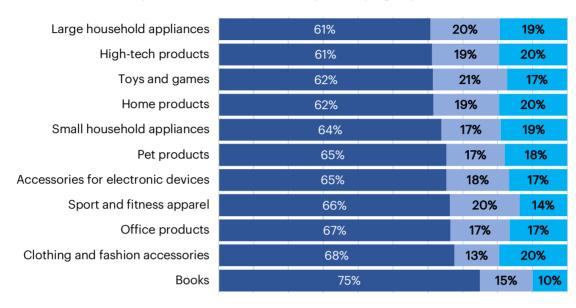


(Base: consumers who have bought online during the last 2 years)

Books are by far the product category on which consumers are least likely to post any review after purchasing.

In contrast, large household appliances and high-tech devices are the products most likely receive reviews from consumers after buying.

Did you rate/write a review on your buying experience?



■NO ■yes, but only a score/star rating ■yes, both a rating and a written review

(Base: consumers who have bought online during the last 2 years)

In all the countries, consumers were more likely to rate/write a review about their buying experience when the product exceeded their expectations.

Consumers who did rate/write a review on their buying experience - By meeting expectations or not

% Did rate/write a review on their buying experience	Based on the reviews from the main source that you consulted, to what extent did the product match with your expectations? it was worse than I it was in line with what I expected expected expected					
experience	expected	expected	expected			
BELGIUM	58%	36%	60%			
ITALY	24%	46%	71%			
PORTUGAL	45%	48%	59%			
SPAIN	41%	47%	63%			
TOTAL	45%	44%	64%			

(Base: consumers who have bought online during the last 2 years and wrote a review or gave a rate on the product they bought)

/ Given ratings

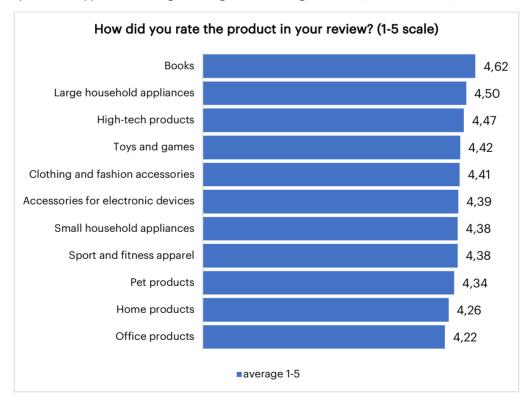
Among those who post a review, there is an Overall Positive Feedback indicating a general satisfaction with the product. The majority rated the product as "very good' $\star\star\star\star\star$) or 'good' ($\star\star\star\star$) across all countries.

The average rating for the product is high across all countries, ranging from 4,28 n Belgium and 4,36 in Italy, to 4,47 in Portugal and 4,51 in Spain.

How did you rate the product in your review?	Belgium	Italy	Portugal	Spain	Total
1 very bad (★)	1%	0,5%	0,5%	1%	0,5%
2 bad (★ ★)	3%	0,5%	0,5%	2%	1,5%
3 medium (★ ★ ★)	10%	7%	6%	4%	7%
4 good (★ ★ ★ ★)	39%	46%	37%	33%	38%
5 very good (★ ★ ★ ★ ★)	47%	46%	56%	60%	53%
Total	100%	100%	100%	100%	100%
Mean (1-5)	4,28	4,36	4,47	4,51	4,41

(Base: consumers who have bought online during the last 2 years and wrote a review or gave a rate on the product they bought)

Among those who wrote a review and rated the product they purchased, books are the product type receiving the highest average score (4,62 out of 5).



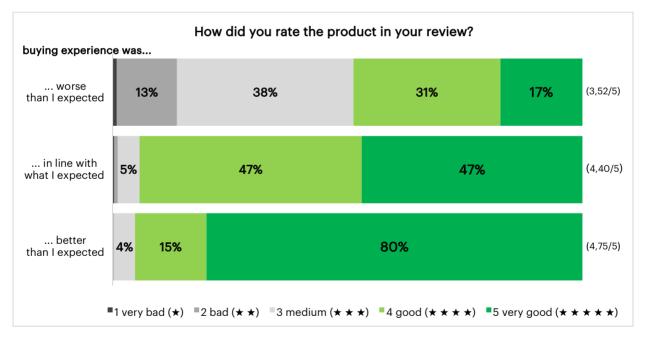
(Base: consumers who have bought online during the last 2 years and wrote a review or gave a rate on the product they bought)

Costumers who consulted reviews before buying the product gave it a higher rating compared to those who did not do it.

	Did you consult any customer reviews before buying the product?			
How did you rate the product in your review?	NO Column N %	YES Column N %		
1 very bad (★)	2%	1%		
2 bad (★ ★)	3%	1%		
3 medium (★ ★ ★)	10%	6%		
4 good (★ ★ ★ ★)	36%	39%		
5 very good (★ ★ ★ ★ ★)	49%	53%		
Total	100%	100%		
Mean (1-5)	4,28	4,45		

(Base: consumers who have bought online during the last 2 years and wrote a review or gave a rate on the product they bought)

Product expectations play a key role in the process. Those who received a product that exceeded their expectations gave significantly higher ratings, with an average of 4.75 out of 5, and 80% awarded it 5 stars.

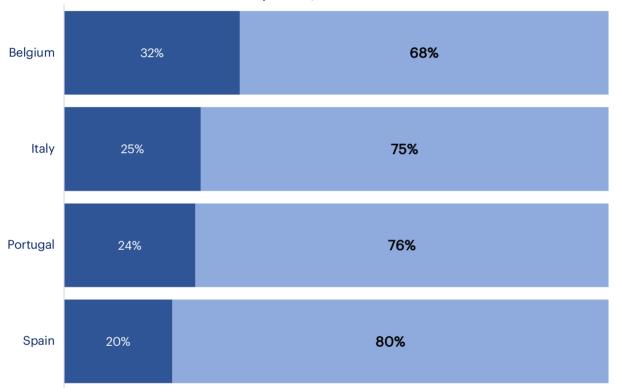


(Base: consumers who have bought online during the last 2 years and wrote a review or gave a rate on the product they bought)

/ Posting customer reviews in general (products, accommodation; restaurants)

Considering all type of reviews – **not only online** bought products, but also reviews related to services such as hotels, apartments, bars, restaurants as well as products bought in physical shops– **74% reported having posted at least one customer review**/rating after buying/using a product/service in the last 2 years.

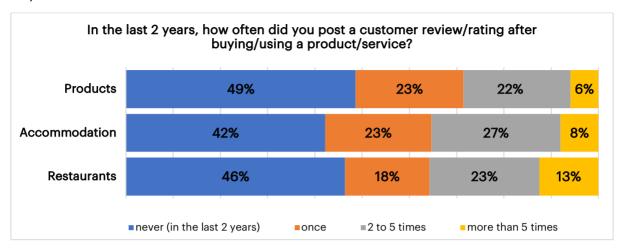
In the last 2 years, did you post any customer review/rating after buying/using a product/service?



■NO, I did not post any review in the last 2 years ■YES, I post at least one review in the last 2 years

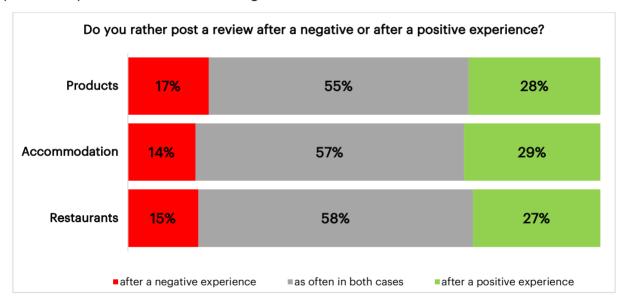
(Base: general population)

Restaurants and accommodations are the services for which consumers are most likely to write a review.



(Base: general population)

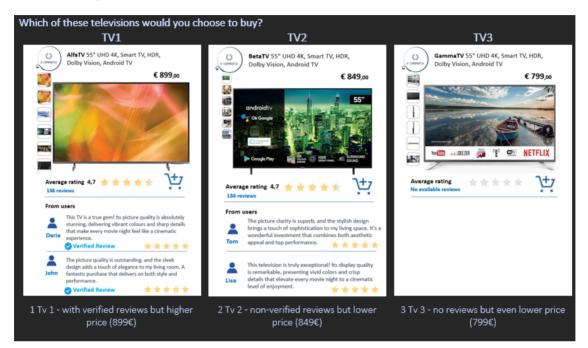
According to consumers responses, they are more likely to leave a review after a positive experience rather than a negative one.



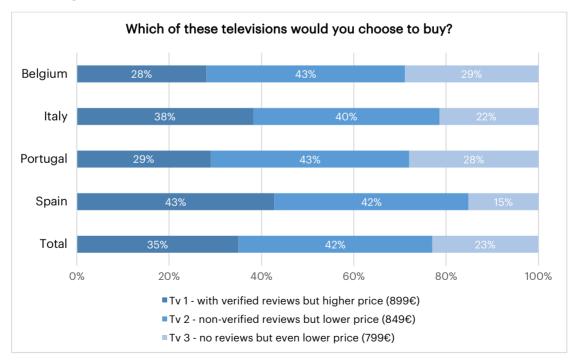
(Base: consumers that have post customer reviews after buying a product or using a service)

EXPERIMENTS

/ Experiment 1 - Televisions

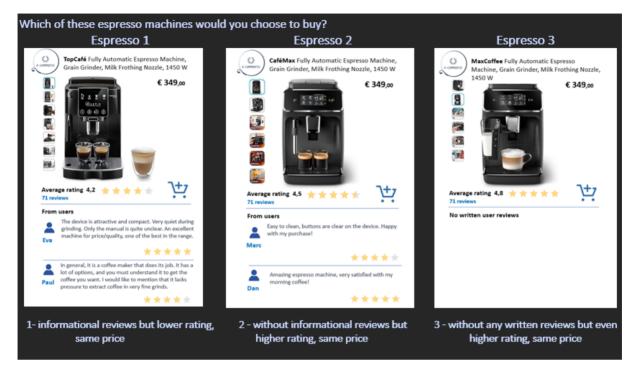


The first experiment presented three televisions and tested both the presence of verified reviews and the presence of reviews in a context of differences in price. The first television was at a price of €899 with very good ratings and verified reviews, the second at €849 with the same ratings without verified reviews and the third at €799 without any reviews or ratings.

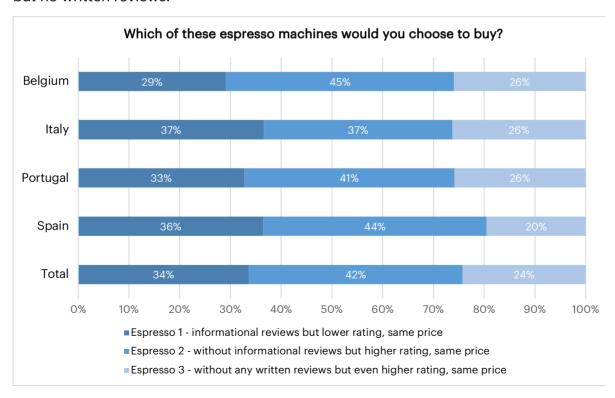


(Base: general population)

/ Experiment 2 – Espresso machines



The second experiment presented three espresso machines and tested the importance of ratings compared to content of the reviews in a context of NO differences in price. The first espresso machine had a 4,2 average rating with rich information reviews, the second had a 4,5 average rating but short reviews and the third had a 4,8 average rating but no written reviews.



ASSESSING THE VALUE OF ONLINE REVIEWS FROM AN FCONOMIC PERSPECTIVE

/ The Value of the Online Review from an Economic Perspective

How valuable is access to more accurate information on the quality of the product for the parties involved in an exchange? To what extent can the presence of information increase the efficiency and affect the "social value" created by the exchange? By social value, in economic analysis, we mean the value for all the parties in a society, including those directly involved in the exchange and, when applicable, third parties that may be affected by the exchange even if they do not participate in it.

/ The social value of information

1. Making a more accurate choice.

The value of an exchange is the difference between the benefit derived from the consumption of a good for the buyer and the cost of providing that good for the seller (which includes the cost of production and all ancillary services related to the sale). Value and cost depend on the "quality" of the good, represented by its characteristics, the presence of manufacturing defects, influenced by the risk of malfunctions, durability, etc.

A first – somehow obvious – observation is that knowledge about the characteristics and quality of the purchased good is valuable as much as it allows to make a better choice, while it has no value if the choice is unaffected by information. We can say that the economic value of the good depends on the ability to modify one's choices based on the knowledge of the characteristics of the good. Conversely, information changes the value of the exchange, on average and in aggregate, when knowledge of the quality of the good leads the individual to forgo a purchase, they would have otherwise made or to make a purchase they would not have concluded in the presence of uncertainty about the quality.

2. Avoiding Adverse Selection.

An additional effect, often highlighted by economists, is the possible occurrence of adverse selection. In the presence of heterogeneous quality and information asymmetries between buyers and sellers/producers and, there could be a deterioration in the quality of goods actually traded on the market.

In response to the risk of adverse selection, actions by sellers or policy interventions are possible. From the sellers' perspective, economic literature has highlighted various strategies through which producers of high-quality goods can "signal" the quality of the goods they sell: offering guarantees (e.g., "satisfaction guaranteed or your money back" policies) and building a reputation. Reviews, which we address in this survey, represent one of these tools. Public

intervention to protect quality can include various measures aimed at eliminating informational asymmetry between buyer and seller. The obligation to meet certain quality standards for those operating in certain markets and other forms of protection (e.g., product liability legislation) fall into this category.

3. Encouraging the provision of higher-quality goods.

Another consequence of consumers having access to information is its role in encouraging manufacturers to enhance product quality. This incentive diminishes or disappears when higher-quality products cannot be distinguished from lower-quality ones. This "dynamic" dimension of the problem, concerning the incentive to provide products of better quality, represents an additional benefit arising from the spread of information among consumers. Thus, information not only enhances the value of exchange in "static" terms — that is, for a given quality distribution — but also in "dynamic" terms, influencing quality improvement.

Clearly, in all dimensions, the value of information is a function of its perceived accuracy, hence of the reliability and credibility of the source, and it is affected by the presence of mechanisms to verify the truthfulness of the information provided.

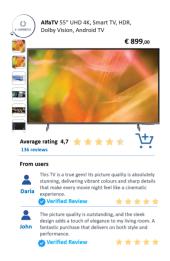
/ Assessing the social value of information

The experiment conducted at the end of the questionnaire does provide some indication of the value consumers attribute to the presence of reviews they perceive as reliable.

In Q24, we consider how the willingness to pay for a product (a television) judged positively by buyers (4.7 stars) is affected by the presence of elements that suggest greater reliability of the judgment. The answers suggests that individuals are sensitive not only to the "rating" that emerges from reviews (the number of stars) but also to other aspects that can contribute to making the review appear more trustworthy and truthful.

Specifically, in Q24 we compare three situations:

- a) Presence of a positive rating with "verified" reviews
- b) Presence of a positive rating with reviews from buyers
- c) Presence of no ranking and no reviews







Television 2 non-verified reviews but lower price (€849)



Television 3 no reviews but even lower price (€799)

The rating is the same in the cases where this is provided. However, the item is offered at different prices, with the price decreasing across the three cases. By observing how respondents distribute their choices among the three options, we can analyse how willingness to pay is affected by the presence and the perceived accuracy of the review – and thus elicit the value respondents attributed to accuracy.³

An estimate of this value can be obtained through a two-step process: (1) the distribution of choices can provide information on how the willingness to pay for the product is affected by the availability of reviews and their being "verified"; (2) by observing how willingness to pay for a product of good quality changes based on the perceived accuracy of consumer judgments, we can try to deduce, albeit approximately, the "value of information" associated with different levels of accuracy.

Step 1. Elicit the willingness to pay for a commodity with references

The data provided by the questionnaire present some limitations that need to be acknowledged.

• They refer to stated preferences rather than revealed preferences. It is known that the latter, as they reflect actual choices, are generally

³ It is important to emphasize that the availability of a reliable signal regarding the quality of a good can have both the effect of encouraging and discouraging the purchase of a particular item. Specifically, we expect a reliable *positive* signal to increase the perceived value of the good and therefore increase the likelihood of purchase, while a *negative* signal would decrease the perceived value and lead to a decision not to purchase. The experiment conducted replicates the case of a product with a relatively high rating accompanied by positive reviews. In this scenario, we anticipate that greater reliability of the rating will result in an increased propensity to purchase. Alternatively, we could have examined the effect of a low score with negative reviews.

preferable, whereas the former require respondents to imagine a hypothetical choice;

- A single price is considered for all respondents for each scenario. This limitation, due to the way the survey had to be conducted, does not allow for the estimation of the distribution of willingness to pay but, by providing a point value, requires the formulation of assumptions about this distribution which cannot be verified through the data;
- By asking to choose the preferred scenario among the three proposed (instead of, for example, proposing a pairwise comparison), it does not directly provide a pairwise ranking of the three options. The ranking must be deduced indirectly.

Despite the described limitations, we can immediately draw one conclusion: respondents seem to attribute a significant difference in value between the different scenarios based on the richness of information provided with the reviews. Based on the first experiment, we see that a considerable number of respondents declare they are willing to spend an additional €50 for a benefit.

In order to derive a more precise quantification of the values of different information, we need to impose more structure to the choice setting.

Let *R* be the increased value of the product when there are reviews and let P the further increase in value when reviews are "verified".

Consumers will select:

- option a when R+P>100 and P>50.
- option b (higher price, reviews) when R>50 but P<50;
- option c (lower price, no review) when R<50 and R+P<100;

In order to elicit the average values of R and P with the data available we need to make some assumptions about the shape of their joint distribution in the population. We assume that⁴:

- 1) R (the value of reviews) is distributed uniformly in the population, from zero to R*;
- 2) P (the increase in value of review when they are "verified") is distributed uniformly in the population, from zero to P*;
- 3) the distribution of R and P are independent.

⁴ That respondents' values uniformly distribute in an interval whose lower bound is zero (assumption 1 and 2) is just a conjecture, justified by the lack of other information about how choices change with price. Assumption 3 is also disputable: indeed, it could be convincingly argued that the value attributed to the reviews may be correlated (positively or negatively) with the value attributed to the fact that these reviews are verified. In the absence of specific information about such possible correlation, by assuming independence, we are excluding this possibility.

Under the stated assumptions, the values of R* and P* can be calculated from the distribution of the sample population among the three options. We have⁵:

With uniform distributions, the average values in the population are $R^*/2 = 61.6$ € and $P^*/2 = 37.1$ €. That is to say: *on average* an individual is willing to pay an additional 61.6 € for the tv set in case reviews are available, and further 37,1 € if review are "verified".

In percentage of the baseline value of $800 \in 6$ these values correspond respectively to 7.7% and 4.6% (the percentage refers to the baseline value of $800 \in 6$).

Step 2. The value of information

There is a difference between the willingness to pay for a product which received good reviews and the ex-ante value of such review. Better information is useful to discriminate between good and bad products, that would otherwise be indistinguishable. In considering the value of such information, the individual considers both the possibility that the product is identified as good and the case that it is of bad quality. The value is then the change in utility conditional on each case, weighted with the relative probability.

Consider that the quality is determined by the possibility the product is defective and assume that the product is valued by the consumer 1000 if it is not defective, 400 if it is defective. Then, an expected value of 800 corresponds to a probability of 1/3 that the product is defective. Consider now that detailed review improves the information, so that when a good evaluation (our 4.7 "stars") is supported by reviews, the probability that the product is defective reduces to 1/4.7

This will increase the willingness to pay to 850, consisted with the experiment. Conversely, assume that if there are no supporting reviews, the probability that the product is defective increases to 3/7 (42,86%).

After this new information, the individual may decide not to buy the product when there are no supporting reviews. This is expected to be the case with a probability equal to the overall probability that reviews are positive. This, from an ex-ante

⁵ See calculation in the Appendix

⁶ The value of reviews and information is related to the price of the item, as the risk of purchasing a bad-quality product is higher, the higer its price is. However, we cannot take for granted that such value is strictly proportional to price, hence the percentage may be different for products with lower or higher value.

⁷ This update in information, via Bayes' rule, is obtained if the product receives supporting review with 60% probability when the product is "good", with only 40% probability if it is "bad". In this case, the (posterior) probability the product is "good" increases to 75% when there are supporting reviews, while it is 4/7 (57,14%) when such reviews are absent. It is possible to calculate the ex ante probability that there will be supporting reviews, which is 8/15 (53,33%).

perspective, can be calculated to be equal to 8/15, i.e., a little more than 50%. By limiting purchase to the case there are reviews in support, the individual will obtain an expected gain of 50€.

To summarize, the expected increase in the value of the purchase is given by 8/15 \times 50 \in = 26,6 \in .

This conclusion depends on the specific values of the probabilities that we have considered. Therefore, the utmost caution is necessary when interpreting these data. Considering different possibilities compatible with the values in the experiment, a safe estimate is that its order of magnitude is around half the increase in the willingness to pay for the product when there supporting reviews.

This value, in the order of 3-4% of the price of the product for reviews and a further 2-3% when such reviews are verified, is significant, indicating that reviews are valuable to consumers and signals aimed at improving their reliability is important too. Clearly, for the reasons already discussed, these are very approximate indications, which should be verified through further analysis, preferably based on actual sales data of the products.

Conclusion

The data available in the survey allows us to address the first of these three dimensions within an approximate quantitative analysis. By using the responses to question Q24, where respondents were asked to choose among three versions of the product with the same overall rating but different prices and different perceived credibility of the reviews, we have provided some quantitative estimate of the "value of information" to consumers.

Our analysis has shown that, on average, the value of information provided by rating backed by reviews for a product with a relatively high rating (4.7 stars), compared to the case there are no reviews nor rating is provided, has been estimated to be around $60 \in$ for an item whose base price is $800 \in$, i.e., it is in the order of 7.7% of the base value. When the reviews are "verified" (or declared such), this value increases, on average, by $37 \in$, that is, by a further 4.6%.

This value is not yet a "value of information", as information can both result in a confirm or a disconfirm of a high quality of a product. Because the individual has to take into account (probabilistically) both possibilities, the magnitude of the "value of information" is around 1/2 of the values above.

⁸ Consider a different assumption: let a defect-free product be valued 1000€, but let the value of a defective one be equal to zero. in this case, the expected value of 800 € implies that the probability the product is defective is 20%. Following the same procedure to calculate the expected gain, we find 27,8 €.

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NOTES



