

Online Reviews and Generation Z's Hotel Choice:

Evidence from an Eye-Tracking Study



Inga Piont

Lomonosov Moscow State University

Alexander Pakhalov

Lomonosov Moscow State University

Background of the study

Online hotel reviews matter



Online reviews are the **second most frequently used information source** for planning and booking trips right after search engines

[Yang et al., 2018]



eWOM has changed the decision-making process for purchasing travel products such as tours and hotel accommodation

[Litvin et al., 2008]



Users read online reviews during their hotel selection process and claim reviews to be **one of the most important factors in deciding** where to stay

[Gretzel and Yoo, 2008; Prabu, 2014]



Positive reviews can significantly **increase hotel bookings**

[Ye et al., 2011]

Reasons to readdress this issue



Generation Z has specific behavioral features

when choosing a destination or a hotel, tourists of this generation are believed to pay special attention to reviews and recommendations

[Liberato et al., 2019; Williams, 2019; Wiastuti et al., 2020]



COVID-19 pandemic has changed both the **behavior of tourists** in general and their approach to choosing a hotel online

[Li et al., 2021]



There is still very little empirical **neuromarketing research modeling online hotel choice**

[Noone and Robson, 2014; Koc et al., 2020]

Previous studies: online reviews

Online reviews are non-commercial, detailed, **experience-based information**, both positive and negative, provided by users online

[Tham, Croy and Mair, 2013; Hu and Kim, 2018],

which **reduces uncertainty** for the consumer

[Litvin et al., 2008; Sparks and Browning, 2011].

Online reviews and hotel choice:

- First studies assessing the impact of online reviews on travel decisions emerged in the 2000s alongside the rapid development of platforms such as TripAdvisor and Booking.com [Litvin et al., 2008]
- Evidence on the importance of ratings and reviews in hotel choice has been obtained in studies involving TripAdvisor.com & Booking.com users [Prabu, 2014; Gavilan et al., 2018]

Features of online reviews and hotel choice:

- Recent reviews are more influential than older reviews and recent positive reviews can mitigate the impact of older negative reviews [Sparks and Browning, 2011]
- Friends' recommendation has a greater impact on the hotel choice decision than strangers' reviews [Gellerstedt and Arvemo, 2019]
- Positive emoticons enhance review helpfulness when the review is narrative-based, negative emoticons increase review helpfulness when the review is list-based [Huang et al., 2020]

Previous studies: eye tracking studies in tourism

- Early eye-tracking study showed that the presence of images on a hotel page reduces the user's cognitive load, as they are easier and faster to evaluate, which allows users to view more options and explore each one in more detail [Pan and Zhang, 2010]
- The paper by Noone & Robson reveals that at the first stage, respondents paid more attention to the ranking on the site while at the second stage they focus on user reviews [Noone and Robson, 2014]
- The eye-tracking study by Aicher et al. showed that respondents looked at the headlines of the reviews more than at the text of the reviews; half of the respondents in the post-experiment survey indicated that reviews influenced their decision to book a hotel [Aicher et al., 2016]
- The important role of photographs in hotel choice was confirmed in the recent study that also found that the top of the page is the most effective location for photos [Espigares-Jurado et al., 2020]

There is still limited evidence on the impact of various **features of online reviews on hotel choices**

Aim & Questions of the study

Our study aims to **assess the role of reviews in generation Z's hotel choice at Booking.com**

We address the following research questions:

1

Do **reviews** have a significant impact on the choice of a hotel **online** by respondents of **generation Z**?

2

What types of reviews **attract** more respondents' **attention** when choosing a hotel online?

3

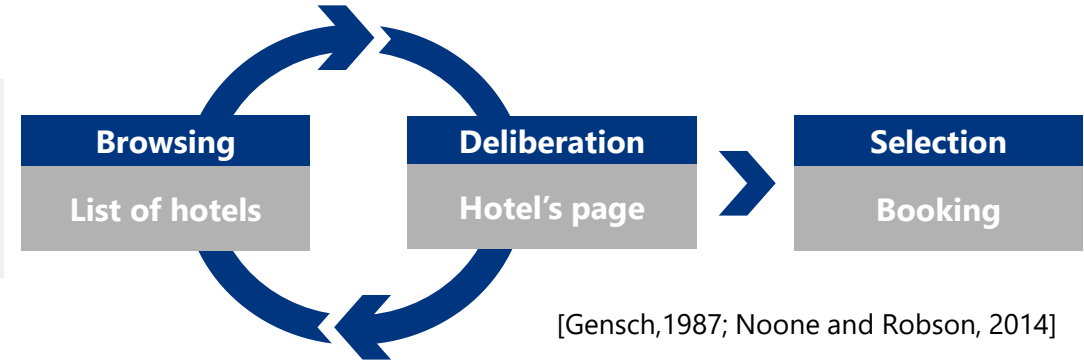
What features of the review affect its (subjectively perceived) **usefulness**, **credibility**, and **valence***?

*Valence is one of the most important features of user-generated information (including online reviews), it refers to perception of the review as positive, neutral or negative

Research hypotheses

1

H1: Reviews have a significant impact on Gen Z's online hotel selection decisions during **deliberation phase**



2

H2a: **Negative** reviews are perceived to be **more useful** than neutral and positive reviews
H2b: **Valence** of a review significantly affects its **perceived credibility**

3

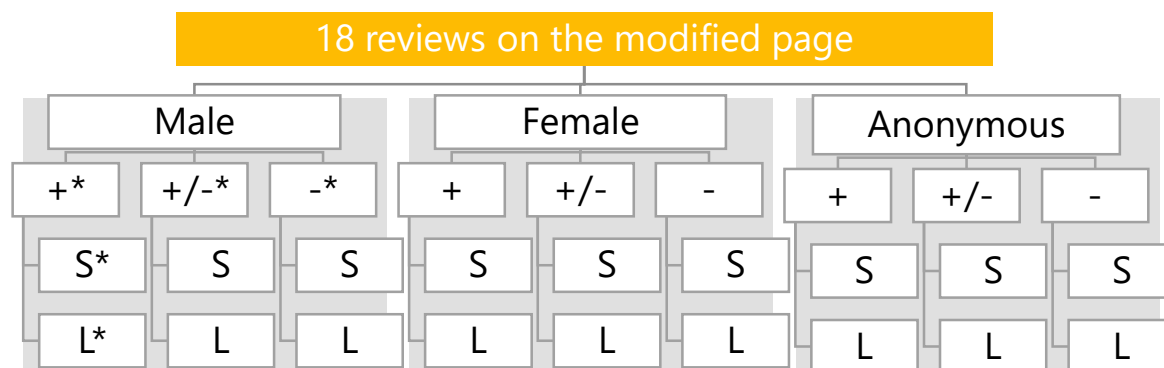
H3a: **Long** reviews are perceived to be **more useful** than short ones
H3b: **Long** reviews are perceived to be **more credible** than short ones

4

H4a: Presence of the **reviewer's name** significantly affects the **perceived credibility** of a review
H4b: **Reviewer's gender** significantly affects the **perceived credibility** of a review

Design of a mixed-methodology empirical study

METHODS: EYE TRACKING & MONITOR RECORDING + SELF-ASSESSMENT (QUESTIONNAIRE)

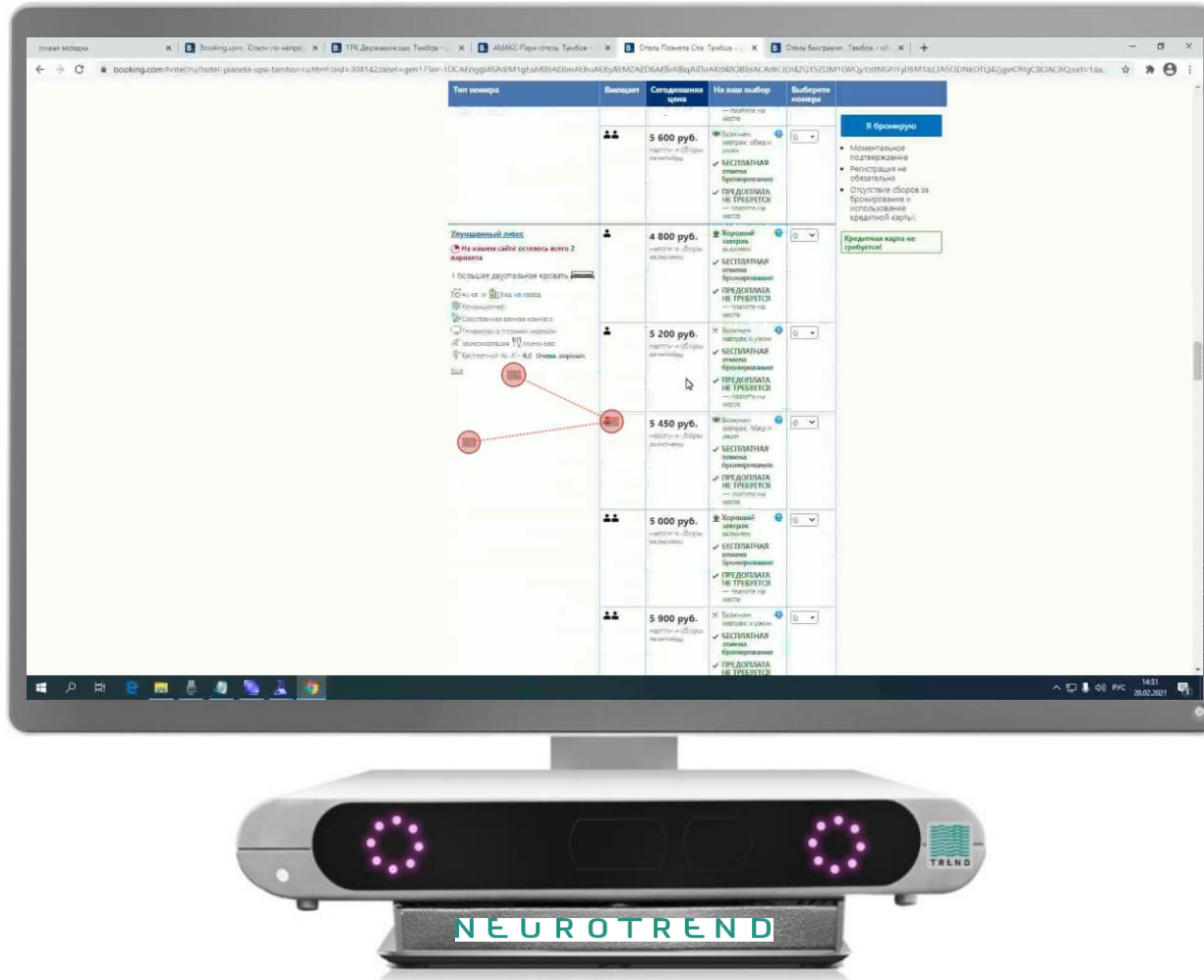


*+ = positive experience only, - = negative experience only,
+/- = both positive and negative experiences; S = short review, L = long review

- References to specific prices and locations were excluded from the text
- Each review was randomly dated (6 reviews for 2018, 2019, and 2020)
- A random sequence of reviews was generated for each respondent
- We also checked the presence of photos in the review, the title of the review, the avatar of the reviewer, etc.
- All reviews were in the respondents' native language (Russian)

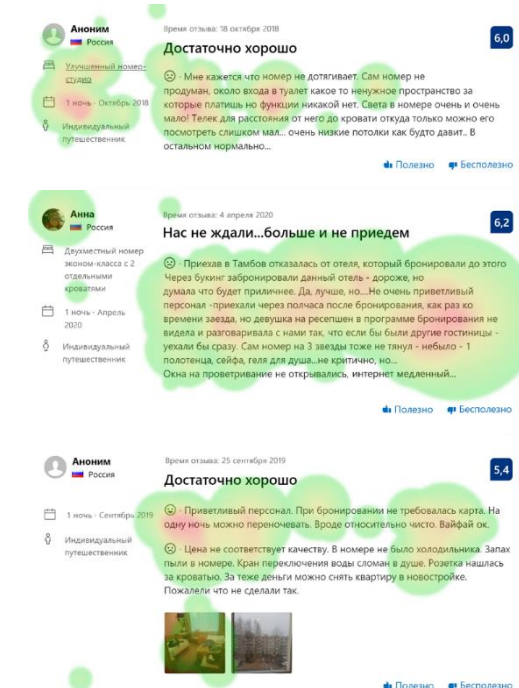
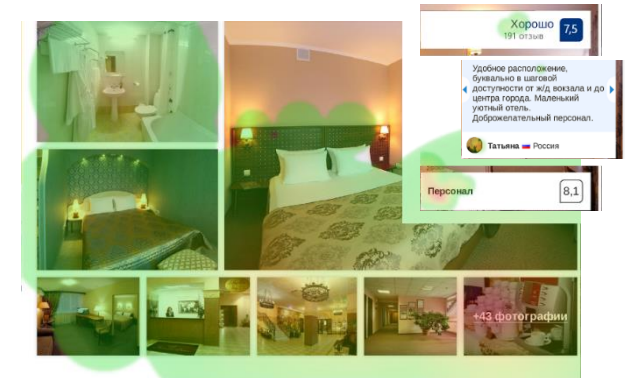
Eye tracking equipment and data

Example: Dynamic gaze plot



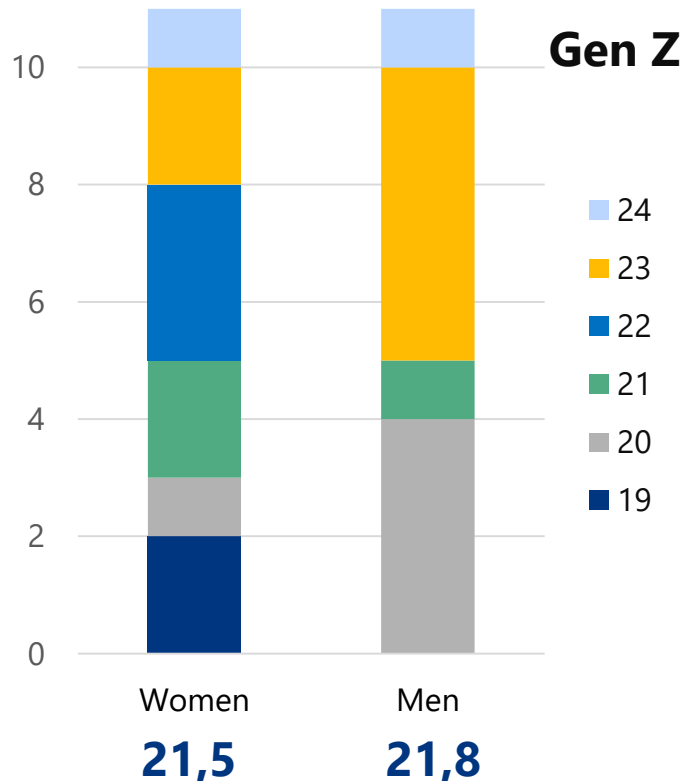
NTrend-ET500 eye tracker (mounted under the monitor)

Example: Heat maps of areas of interest



Sample

- Living in Moscow, Russia*
- No working experience in tourism
- Never been to the destination (Tambov, Russia)
- Booked a hotel online at least once last year
- Use Booking and/or other OTA: Airbnb, Ostrovok.ru

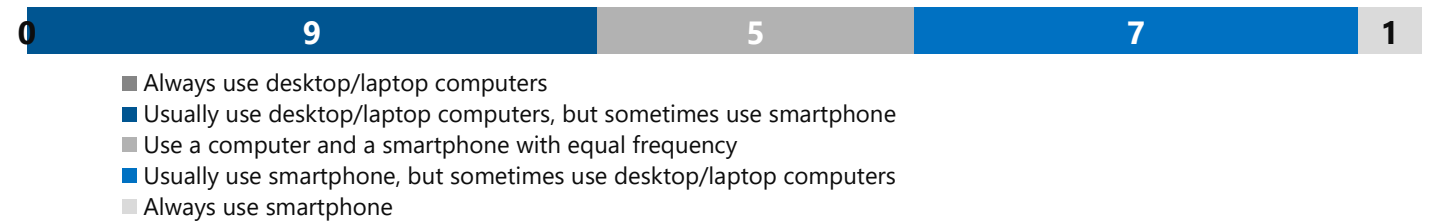


How many times have you stayed at a hotel last year?



the impact of the COVID-19 pandemic, travel bans, and border closures

What device do you usually use when choosing a hotel?



What is the maximum amount you are willing to pay for a single room in a hotel for 1 night?



- No budget constraint
- In the selected tourist destination, almost all possible options belong to price range up to 4,600 rub

No significant differences were found between men and women according to the Mann-Whitney U-test, 5% level
Calculated and compiled by the authors based on the results the initial-screening questionnaire

I. Gaze fixations (choosing a hotel on Booking.com)

The average time for choosing **≈10 min**
(from 3 min 9 sec to 23 min 44 sec)

«Browsing»

*/went to a page with a list of possible
placement options/*

- On average, respondents **applied 2.7 filters** (from 0 to 7) : «Less than 3 km» (16 out of 22), «Hotels» (11), «Price» (11), etc
- 8 respondents opened a page with a **map**
- Only 5 out of 22 respondents used the **sorting** function.

«Deliberation»

*/clicked on a hotel and went to the hotel page
for more details/*

- On average, **visited 3.8 hotel pages**: from 1 page (4 respondents) to 8 (2)

CORR (duration, number of hotels) = 0,76

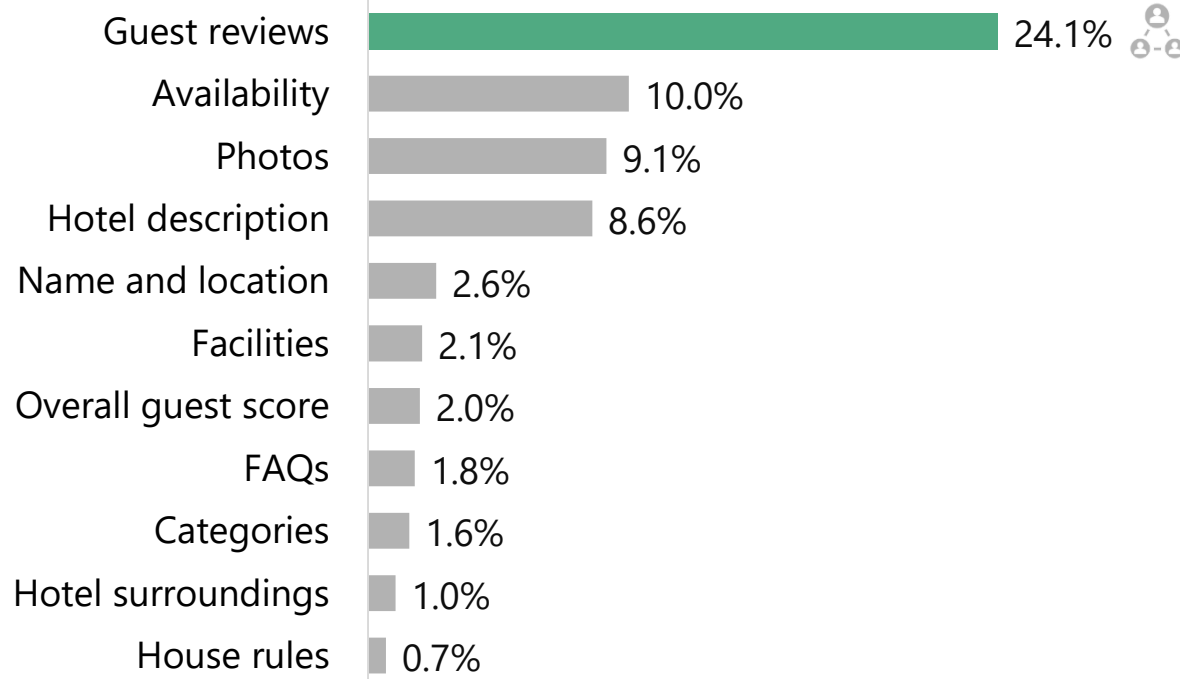
Hotel page element	Total duration, sec			p-value
	All hotels	Chosen hotel	Consideration set (excluding chosen one)	
Score (browsing)	8,03			
All reviews	6,60	12,65 (6,1 review)	4,41 (2,5 review)	0,009***
Panel reviews	3,23	5,46	2,57	0,178
Bottom reviews	1,85	4,89 (1,8 review)	0,76 (0,5 review)	0,045**
Top review	0,72	1,15 (0,9 review)	0,41 (0,3 review)	0,061*
Photopanel reviews	0,80	1,16	0,68	0,610
All scores	0,49	0,92	0,30	0,010**
All categories	0,19	0,43	0,14	0,343

* ** *** Differences are significant at 10%, 5%, 1% level according to paired samples Wilcoxon test

II. Gaze fixations (a modified hotel page)

RQ1

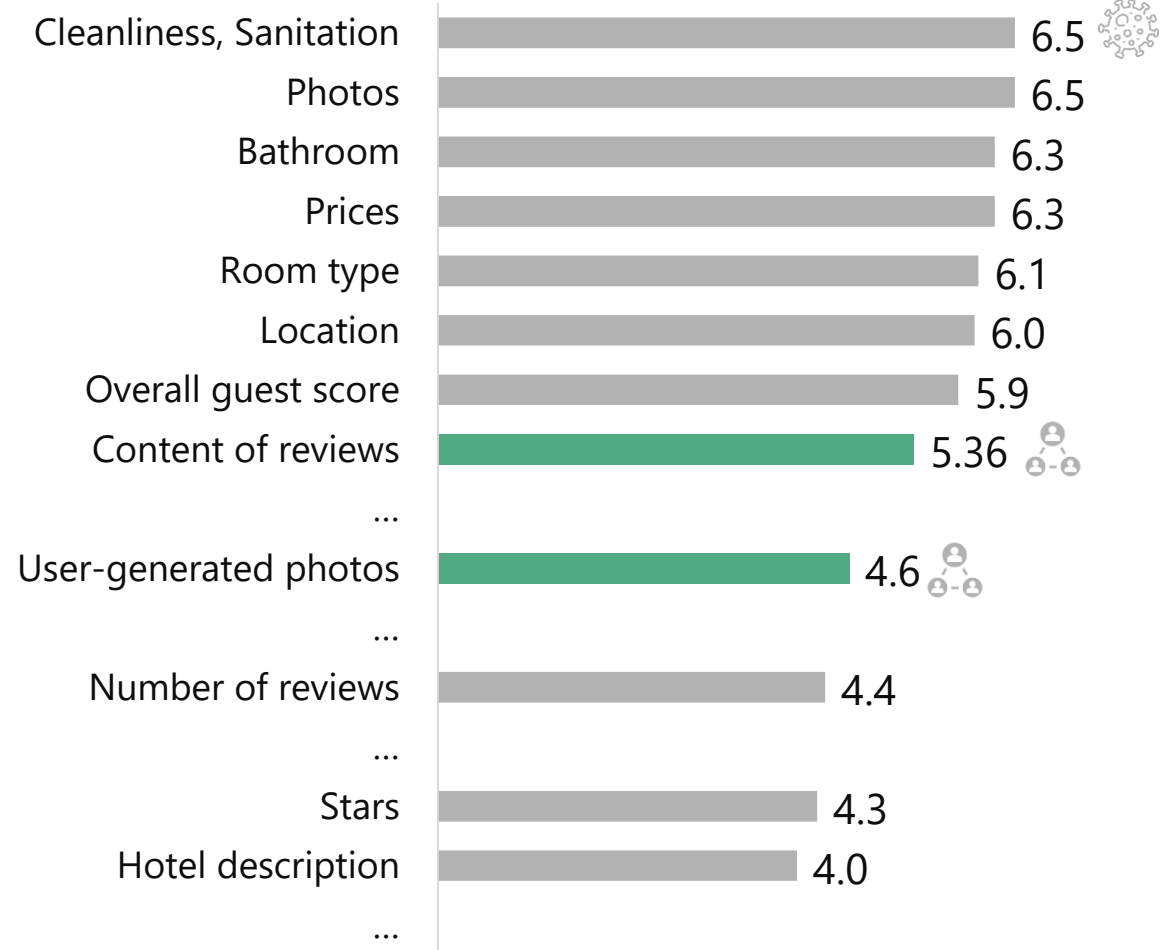
The average relative gaze fixations for page elements as a percentage of the page view duration



20 out of 22 respondents "stayed" in the hotel chosen at the first stage

- **Reviews** on a modified page (17)
- An insufficient **number of photos** (8) and **the worst design** of the hotel, assessed by photos (18)
- Other reason (7)

How strongly do the following factors influence your choice of hotel? (7-point Likert scale, 31 factors, averages)



Calculated and compiled by the authors based on the results of the second part of the experiment and the questionnaire.

II. Analysis of the duration of gaze fixations on reviews

RQ2

Total duration of the respondent's gaze fixations (sec)

Number of the review	-0.155^{***} (0.024)
Unusual title	0.725^{**} (0.339)
User-generated photo	0.922^{***} (0.253)
Size of negative paragraph (lines)	0.273^{***} (0.062)
Constant	1.989^{***} (0.541)
Observations (N)	360 (18x20)
Adj R ²	0.439
F Statistic	13.224 ^{***}

*p**p***p<0.01

Calculated and compiled by the authors based on the results of the second part of the experiment and the questionnaire.
Calculated in R, lm model, dummy variables for respondents (not shown in the table), and the robust HC1 standard errors.



The image shows a screenshot of a hotel review page. Two callouts highlight specific reviews:

Review 1 (Anna, Russia, 4 April 2020): The review is titled "Нас не ждали...больше и не приедем" (We weren't waiting...we won't come back). The review text is: "Приехав в Тамбов отказалась от отеля, который бронировали до этого. Через букинг забронировали данный отель - дороже, но думала что будет приличнее. Да, лучше, но...Не очень приветливый персонал -приехали через полчаса после бронирования, как раз ко времени заезда, но девушка на ресепшен в программе бронирования не видела и разговаривала с нами так, что если бы были другие гостиницы - уехали бы сразу. Сам номер на 3 звезды тоже не тянул - не было - 1 полотенца, сейфа, геля для душа...не критично, но... Окна на проветривание не открывались, интернет медленный..." (After arriving in Tambov, I refused the hotel we had booked before. We booked this hotel through Booking.com - it was more expensive, but I thought it would be nicer. Yes, it's better, but...The staff is not very friendly - we arrived half an hour after booking, just at check-in time, but the girl at the reception didn't see us in the booking program and talked to us like that, that if there were other hotels, we would have left immediately. The room itself for 3 stars was not worth it - there was no - 1 towel, safe, shower gel...not critical, but... Windows for ventilation were not opening, internet was slow...). The review is rated 6.2.

Review 2 (Anonymous, Russia, 25 September 2019): The review is titled "Достаточно хорошо" (Quite good). The review text is: "Приветливый персонал. При бронировании не требовалась карта. На одну ночь можно переночевать. Вроде относительно чисто. Вайфай ок." (Friendly staff. No card was required when booking. You can stay for one night. It's relatively clean. Wi-Fi is OK). The review also mentions: "Цена не соответствует качеству. В номере не было холодильника. Запах пыли в номере. Кран переключения воды сломан в душе. Розетка нашлась за кроватью. За те же деньги можно снять квартиру в новостройке. Пожалели что не сделали так." (The price does not match the quality. There was no refrigerator in the room. Dusty smell in the room. The water switch tap is broken in the shower. The outlet was found under the bed. For the same money, you can rent an apartment in a new building. I regretted that they didn't do it that way). The review is rated 5.4.

10

As is:

Rating given to the hotel by the reviewer



Controlled:



Ratio of positive and negative cues



As is:

Emotions, style, etc.

Valence (7-point semantic differential)

10

Reviewer's score

0.658^{*}**
(0.035)



Size of positive paragraph

0.141^{*}**
(0.031)



Size of negative paragraph

-0.120^{*}**
(0.028)



Positive paragraph only

0.465^{}**
(0.195)

Constant

-5.030^{*}**
(0.296)

Observations (N)

396 (18x22)

Adj R²

0.797

F Statistic




63.122^{*}**

*p**p***p<0.01

Calculated and compiled by the authors based on the results of the second part of the experiment and the questionnaire.





Calculated in R, lm model, dummy variables for respondents (not shown in the table), and the robust HC1 standard errors.

Usefulness (7-point semantic differential)

H3a 	Informativeness (cues)	0.218^{***} (0.027)
	Unusual title	0.563^{***} (0.180)
	User-generated photo	0.423^{**} (0.189)
H2a 	Valence	-0.082^{**} (0.036)
	Constant	-0.548 (0.434)
Observations (N)		396 (18x22)
Adj R ²		0.320
F Statistic		8.427 ^{***}

*p**p***p<0.01

Credibility (7-point semantic differential)

	User-generated photo	0.724^{***} (0.162)	0.745^{***} (0.161)
	Year	0.143[*] (0.075)	
H4a 	Anonymous review	-0.433^{***} (0.136)	
H4b 	Written by woman		0.650^{***} (0.143)
	Written by man		0.287[*] (0.159)
H3b 	Size of positive paragraph	0.298^{***} (0.039)	0.305^{***} (0.039)
	Size of negative paragraph	0.078^{***} (0.030)	0.069^{**} (0.029)
H2b 	Positive paragraph only	-0.815^{***} (0.220)	-0.906^{***} (0.215)
	Constant	-288.468 [*] (150.446)	0.135 (0.377)
Observations (N)		396 (18x22)	396 (18x22)
Adj R ²		0.385	0.389
F Statistic		10.152 ^{***}	10.314 ^{***}

Calculated and compiled by the authors based on the results of the second part of the experiment and the questionnaire.
 Calculated in R, lm model, dummy variables for respondents (not shown in the table), and the robust HC1 standard errors.

Hypotheses testing results

1

H1: Reviews have a significant impact on Gen Z's online hotel selection decisions during **deliberation phase**



2

H2a: **Negative** reviews are perceived to be **more useful** than neutral and positive reviews
H2b: **Valence** of a review significantly affects its **perceived credibility**



3

H3a: **Long** reviews are perceived to be **more useful** than short ones
H3b: **Long** reviews are perceived to be **more credible** than short ones



4

H4a: Presence of the **reviewer's name** significantly affects the **perceived credibility** of a review
H4b: **Reviewers's gender** significantly affects the **perceived credibility** of a review



Results and implications

Key findings

- Respondents read reviews when choosing a hotel, but **reviews are more likely to confirm the user's choice** after the hotel has been “pre-selected” based on other parameters (price, photos, etc.).
- The results of the regression analysis showed that the total duration of the fixation of the respondents' gaze on the review is significantly influenced by the **number of the review on the page, the presence of photos in the review, the title, and the length of the paragraph with a negative experience**
- We also identify factors that influence the perceived usefulness, credibility, and valence of a review

Managerial implications

- Hotels have to **pay attention to both the information they provide to aggregators and to guest reviews**, encouraging current guests to share their experiences with those who are just planning a trip
- Hotels need to **respond to user reviews** and strive to improve the customer experience to generate positive online feedback
- Online booking systems and websites should **post reviews with photos above on the page** as they grab the attention of users and increase the perceived usefulness and credibility of the review

Limitations and further research

- **Site specifics:** our results are valid for the Booking.com website (desktop version), it is possible that when examining the selection on other sites and mobile apps, the results will differ due to differences in UI/UX etc.
- **User task specifics:** the behavior when choosing a hotel and the amount of time spent on the site may also differ depending on the length of the trip (for longer trips, price sensitivity may increase, etc.), the destination (for example, for traveling abroad), and the purpose of the trip (for example, for a beach holiday)
- **Sample specifics:** all of our respondents were young people between 18 and 24 years, mostly living in Moscow, Russia, the comparison of hotel selection by users of different generations / nations is a promising area for further research

Despite these limitations, the use of eye-tracking allowed us to analyze in detail the individual path of the tourist and highlight certain patterns of behavior and choice

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Let's stay in touch



Inga Piont

MSc in Marketing, Lomonosov MSU

ipiont@yandex.ru



Alexander Pakhalov

Research fellow, co-head of Marketing master's program, Lomonosov MSU

pakhalov@gmail.com

