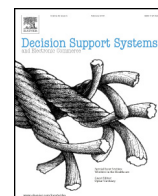




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Saliency effects of online reviews embedded in the description on sales: Moderating role of reputation

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ABSTRACT

This study explores the effects of online reviews embedded in the product description (OED) on sales. Drawing on the frameworks of previous studies on the saliency effect, the effects of online reviews, and seller reputation on sales, we propose that from the perspective of saliency effect, OED is a helpful tool for making purchase decisions, and reputation plays a moderating role in the relationship between OED and sales. We explore experimentally and empirically the roles of OED and reputation. Results indicate that OED has a positive effect on sales, and a high reputation strengthens the impact of OED on sales. Our findings demonstrate the importance of OED and reputation, as well as their significant practical implications for customers and online sellers.

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1. Introduction

Online reviews have received wide acceptance from most customers along with the growth of e-commerce. Such reviews play an important role in helping potential customers reduce their uncertainty when making purchasing decisions. Therefore, the increasing emphasis on online reviews by customers and sellers has aroused attention in various academic fields. Recently, scholars suggested that online reviews have become a helpful tool for information collection, purchasing decision making, and sales improvement [9,10,13,16,19]. However, the massive number of available online reviews makes them exhausting for customers to read point by point. Information overloading is considered a cause of customer complaints [26]. Therefore, numerous online platforms provide or improve their rating mechanisms to enhance the helpfulness of their online reviews for customers making purchasing decisions.

Aside from implementing fixed rating mechanisms in their C2C e-commerce websites, sellers can also design the layout of their product descriptions. Therefore, online sellers have adopted a new way of presenting their online reviews to increase sales. They often combine

informative and helpful reviews and then annotate these reviews with some explanations or comments. These reviews are displayed in a salient position on their product description pages to create a scenario in which sellers and customers discuss issues that are relevant to the product features. In this study, online reviews embedded in product descriptions (OED) refer to a bundle of annotated online reviews that sellers integrate into their product descriptions occupying a salient position. Fig. 1 presents a screenshot of an OED in a store in Taobao.com. Most helpful reviews are selected and utilized by online sellers in the heart of their product descriptions. Hence, an enhanced understanding of OED will offer clear benefits to online sellers and customers.

Our focus on OED is driven by two major goals. First, OED must be considered relevant in C2C e-commerce settings because of the supplementary branch of online reviews. Second, we must ensure that customers pay attention to OED before the effects of OED on sales performance can be confirmed because not all sellers adopt OED in their e-shops. Although previous studies have shown that customer endorsement can affect the way people trust online transactions [28], these studies did not identify the effect of OED on sales. The relationship between OED and sales performance in an online setting is still not completely explored. Accordingly, this study is directed toward determining experimentally and empirically whether the OED provided by sellers in the related online contexts can affect customer choices.

Meanwhile, in an e-commerce context, reputation can be interpreted as a successful signal of a seller's quality to potential

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Fig. 1. A screenshot of OED in Taobao.com.

customers [5]. Many studies have found that reputation has a significant impact on business performance [33,36]. Thus, the current study also discusses whether seller reputation can influence the relationship between OED and sales.

The key questions of this study are stated as follows:

- Will customers pay more attention to OED than to other factors?
- Does OED affect the sales performance of sellers in C2C e-commerce?
- How will reputation influence the effect of OED on sales?

The above research questions will be comprehensively addressed throughout this study. By analyzing previous research, we hypothesize the predicted answers for the abovementioned questions in the experiment and empirical studies. The rest of this paper is organized as follows. First, we provide the theoretical framework and research hypotheses for this study. Second, we conduct an experiment and an empirical study, as well as present the data analysis results in detail. Finally, we present the theoretical and practical implications of our findings and our conclusions.

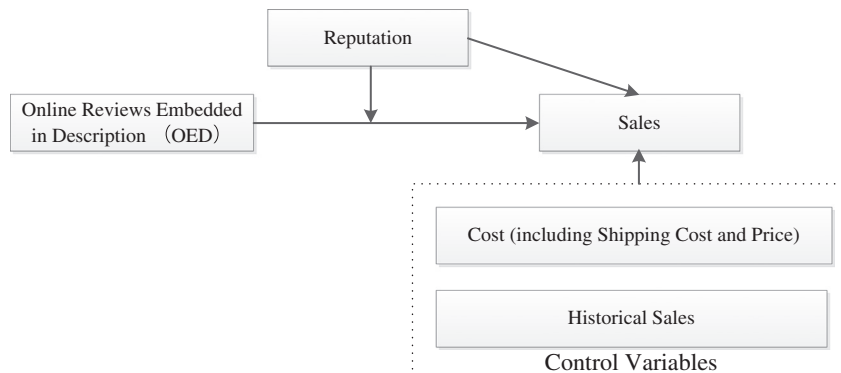


Fig. 2. The theoretical framework.

Table 1
Details of groups.

			OED		
			With	Without	
Experiment Set I	Group 1: Product A and Product B Group 2: Product C and Product D	OCRs (with the same reputation)	With Without	Product D Product B	Product C Product A
Experiment Set II	Group A: Product 1 and Product 2 Group B: Product 3 and Product 4	Reputation (without OCrs)	High Low	Product 2 Product 4	Product 1 Product 3

2. Theoretical framework and research hypotheses

2.1. Saliency effect of OED

As a type of e-WOM, online reviews affecting product sales and the purchasing decisions of customers are extensively studied in the movie industry [10], book markets [8,27], digital products [21,30], software downloading websites [14], hospitality industry [31,44,48], and healthcare industry [40]. Most studies have emphasized the influence of the valence, volume, and text features of online reviews on sales performance or customer choices. However, new forms of online reviews have emerged along with the development of e-WOM; examples include celebrity endorsements [45], embedded advertisements [28], trial reports, and OED, as discussed in this paper. Compared with traditional online reviews, OED have the same or even richer content, but with a salient position and additional explanations in the product descriptions. However, the question of whether OED with these unique characteristics will affect the sales performance remains unresolved.

The impact of OED on sales performance or customer purchasing decision can be explained through saliency effects. Saliency effect refers to the phenomenon that any aspect of a stimulus, for whatever reason, stands out from the rest [6]; it is widely used in perceptive and cognitive psychology. This concept can be applied to various settings, from item or target saliency effects [22,23] to consumer choice making [6,17]. In the psychology field, Fisher, Pawich, Dickes, Paden, and Toussaint [15] suggested that increasing the saliency of behavior–consequence relations may help increase correct responding in children with autism spectrum disorders who exhibit persistent errors. Trawley, Law, Brown, Niven, and Logie [42] found that the increased perceptual saliency of a cue would benefit prospective memory in a dynamic and visually rich environment. In marketing literature, saliency effect is usually used to identify the customers' focus in the adverts or product images. Alers, Liu, Redi, and Heynderickx [2] conducted a three-phase experiment and found that the saliency areas with different levels of quality have a greater effect on the overall quality of the product image than the background areas. Holmberg, Holmqvist, and Sandberg [23] found that low-level saliency features had a significant effect on the visual attention of children on online adverts. However, verifying the saliency effect in e-commerce is difficult because all products sold in online malls are demonstrated in a fixed layout. OED is embedded in the traditional product descriptions but is not a must. Hence, it presents a unique perspective to study the saliency effect in e-commerce.

In online purchasing, consumers will be influenced by some differential salience of the elements in a wide range of alternative products, in which OED could be one element. Featured online reviews inserted in a particular position convey the impressive and salient perceptions of existing customers and provide more cues for the purchasing decisions of potential customers. In other words, a salient perception set of product characteristics brought together will lead to effective purchasing decisions by customers. In addition, with more explicit annotations and comments on traditional online reviews, consumers are inclined to read the reviews that demonstrated in combination cost-effectively. Thus, we propose the following:

H1a. *Customers pay attention to and consider OED a salient and helpful cue for making purchasing decisions.*

H1b. *OED has a positive effect on product sales.*

2.2. Reputation of online sellers

Reputation has been investigated across numerous fields, from offline interactions to online communications, through a variety of models and paradigms. In anonymous online markets, electronic rating systems have efficiently provided information about the reputation of sellers to compensate for the lack of face-to-face interactions [39]. Several researchers have suggested that the reputation of sellers is important in an e-commerce environment. Some studies have found that reputation or feedback ratings strongly affect sales, purchasing decisions, and product price [4,18,32,50]. Dewan and Hsu [12], Przepiorka [38], and Depken and Gregorius [11] used eBay auction data to investigate the influence of reputation on closing price and the likelihood of sales. Using buy-it-now data from Taobao, Ye, Li, Kiang, and Wu [49] found that negative feedback ratings have positive effects on sales. Xu, Lin, and Shao [46] identified seller reputation as one of the factors that could affect the purchasing decisions of buyers. Although seller reputation can improve consumer trust and sales, its moderating role in the relationship between other factors and sales must be considered and fully explored. Given that reputation can convey the credibility of e-stores to customers, customers trust the information presented in e-stores with a strong reputation [37] and are willing to accept the higher price posted by more reputable sellers [33]; in e-stores, reputation not only produces a direct effect on sales but also plays a moderating role. As part of an e-store layout, OED will be highly preferred by customers if the overall reputation of the seller is high. Therefore, we posit the following:

H2a. *Reputation has a positive effect on product sales.*

H2b. *A high reputation strengthens the effect of OED on product sales.*

Historical sales, price, and shipping cost [3,25,51] are also included as control variables in this study. In summary, customers pay attention to OED, which is expected to influence the customers' attitude toward products, and then lead to high sales for online sellers. Our theoretical framework is illustrated in Fig. 2.

Table 2
Demographics of experiment participants.

Gender	Male	14
	Female	16
Education	Graduate students	30
Age	20–29	28
	30–40	2
	41–50	0
Experience of using the Internet	1–3 years	0
	4–6 years	13
	7–9 years	8
	Above 9 years	9
Duration of online surfing (number of hours per week)	2–10	3
	11–25	5
	26–40	16
	>40	6
	Frequency of online shopping in the last year	1–10
	10–20	9
	20–30	5
	>30	14

We conducted two studies utilizing distinct methodologies to test our hypotheses. In Study 1, we conducted an experiment in which OED was manipulated to test its necessity and helpfulness, as well as the moderating role of reputation while the potential differences in price and historical sales were controlled. In Study 2, we extended our experimental results by examining actual products from a popular C2C online platform (Taobao.com) to measure the effects of OED and reputation on sales.

3. Study 1: Experiment

First, a 2 (OCRs: with/without) \times 2 (OED: with/without) experiment (Experiment Set I) was performed. To explore the influence of OED on customer purchasing decisions with/without OCRs, two groups (i.e., Group 1 and Group 2) of products were selected, with each group having two products. Then we conducted another 2 (OED: with/without) \times 2 (Reputation: high/low) experiment (Experiment Set II) to verify the moderating role of reputation. Two groups were selected from the combination of high/low reputation (i.e., Group A and Group B). Details of the groups are shown in Table 1. The effects of OED and reputation were identified by comparing the decisions of the participants between groups.

3.1. Apparatus and stimulus materials

The eye movements of participants were tracked and recorded by a Tobii T60 eye tracker. The tracker measures the reflection of infrared rays it emits on the cornea (hard outer layer) of both eyes. For all the participants, the complete trace of the point of regard on the web pages and the mouse movement was retained. This study incorporated an analysis of eye-tracking metrics, such as total fixation durations (seconds), of each participant by using the algorithm of van der Lans, Wedel, and Pieters [43] to explore the effects of OED and reputation on customer purchasing decisions.

The target products of these two experiments included a cleaning robot for Experiment Set I and a cellphone for Experiment Set II. According to the requirement of experiment design, we identified four proper product sellers from Taobao.com for each experiment set. For each type of product, the selling price, historical sales, and brand name were shown to be the same for all products to avoid the influence of participants' subjective preferences [29,47].

3.2. Participants

The sample included 34 graduate students recruited from the School of Management, all of whom received a small gift for their participation. Four were eventually eliminated because of incorrect calibration. The final participants included 14 males and 16 females. Two participants were over 30 years old, while the remaining participants were between 20 and 29 years old. All of them had online shopping experiences. The demographics of the participants are shown in Table 2.

3.3. Procedure

The participants were individually seated in front of a 17-inch LCD computer screen on which the stimuli were presented in full screen and full color. After undergoing an eye-movement calibration test and receiving a short questionnaire for recording demographic data, the participants were randomly exposed to a page of search results for two products group by group. In each group, the participants were then instructed to explore the two products freely and separately by checking their prices, shipping costs, descriptions, reviews, and reputation as if they were at home. The participants were allowed to look at the webpage for as long as they needed. After identifying their target product as if they were trying to purchase such a product from the Taobao website, the participants were asked to switch to the next

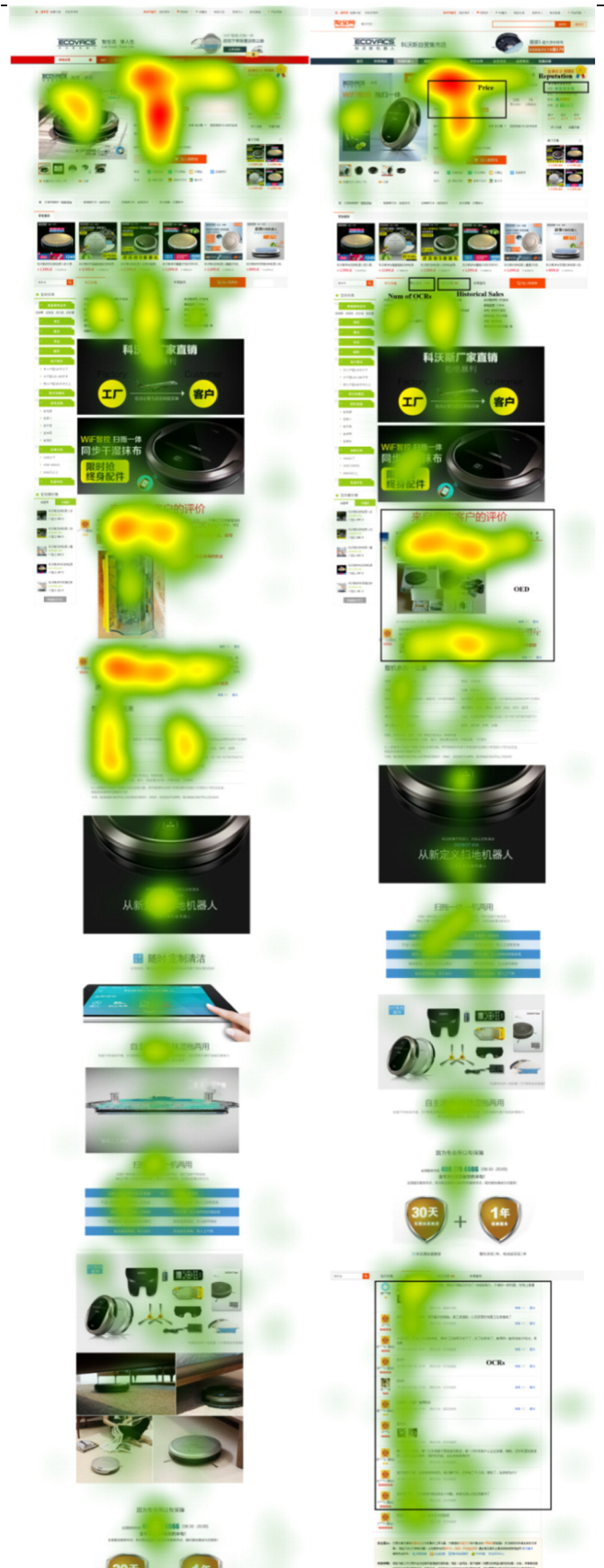


Fig. 3. The heatmaps and AOIs of Product B and Product D.

page and check the single box to make their purchasing decision. The whole experiment took about 25 minutes to complete.

3.4. Data analysis and results

3.4.1. Effects of OED on customer purchasing decisions

The raw eye-tracking data were analyzed using Tobii Studio. As shown in Fig. 3, a part of the heat map of the product description pages indicated that some areas aroused a great degree of attention. The colored heat map used a color gradient to display those areas with considerably long fixations. In this experiment, the red areas indicated the longest fixations, the yellow areas indicated those areas with the second longest fixations, and the green areas indicated those areas with the lowest degree of fixations. The uncolored web pages were ignored by the participants. On the basis of the variations in these fixations, we defined six blocks of information on each product webpage, including OED, OCRs, Num of OCRs, reputation, price, and historical sales. These blocks were selected as the area of interest (AOI) for further analysis, which the participants could not perceive during experiments. Fig. 3 (right) illustrates an example of the AOIs on the product webpage. Longer fixation durations were found in the AOIs of OED in each group, regardless of whether OCRs exist (Fig. 4). According to the recordings, only 2 out of 30 participants never gazed at OED in this experiment. Although the total fixation duration of OCRs did not change considerably in Group 2, the total fixation duration of OED made the most significant contribution among all the AOIs. This result indicated that customers paid attention to OED in the salient position and spent considerable time in reading it. Thus, H1a was supported.

We used the total fixation duration (without zeros) to measure the (sum) mean duration of fixation among the AOIs in seconds [1]. Total fixation duration refers to the sum of all the participants' durations for all fixations within an AOI. When the participants did not pay attention to the AOIs, the fixation durations were recorded as zero. Previous studies indicated that fixation duration had an effect on human behavior. A reduction in fixation duration should result in a reduction in search times [34]. Ye et al. found that an increase in fixation on historical sales would result in a herding behavior in C2C e-commerce [48]. Therefore, fixation duration on OED would logically have an effect on the purchasing decisions of customers in this study. The participants were then divided into two sub-groups, long fixation duration group and short fixation duration group, according to the fixation duration on OED by using the median value of total fixation duration in each group (Table 3). These two sub-groups were compared to explore the differences in the purchasing decisions in Groups 1 and 2. In both groups, participants choosing products with OED recorded as 0 in the dataset; otherwise,

they were assigned a value of 1. The decisions are presented in Table 3. The t-test results indicated that in both groups, participants in the long fixation duration group were more likely to choose the products with OED, whereas participants in the short fixation duration group were less likely to choose such products ($\text{Sig}_{g1} = 0.000$ and $\text{Sig}_{g2} = 0.000$, respectively). Therefore, the two sub-groups had significantly different characteristics in making purchasing decisions, and the fixation durations on OED could affect the purchasing decisions whether OCRs exist or not. Consequently, a long fixation length on OED will reasonably increase sales. Thus, H1b was supported.

3.4.2. Moderating effect of reputation

As shown in Table 4, 24 participants chose the products with OED in the case of high reputation, and 16 participants chose the products with OED in the case of low reputation. The interaction effect of reputation is illustrated in Fig. 5, which indicates that an increase in reputation implies an increase in sales of products with OED. A chi-square test was conducted to verify the effect of reputation, and the results in Table 5 show that significant differences were found in the impact of OED on sales at different reputation levels ($\text{Sig.} = 0.028$). That is, the effect of OED on purchasing decisions was moderated by the reputation. Hence, H2b was accepted.

4. Study 2: Taobao customer reviews embedded in product description

The primary goal of Study 2 was to test H1b to H2b by exploring the effects of OED on sales in a real setting. We collected and analyzed actual reviews and sales data from the Taobao website, which provides both online reviews and historical sales for customers. Taobao.com was chosen over other possible platforms because (1) our focus was OED rather than OCRs and (2) other popular online shopping platforms do not provide OED in their product descriptions. Taobao.com allows sellers to insert any information in their product descriptions, including the reviews written by previous customers.

An empirical analysis was conducted to explore the effect of OED on sales and determine how seller reputation moderated such a relationship. On the basis of the AOIs that concerned by most customers in Study 1, we included sales, OED, reputation, historical sales, price, and shipping cost as variables in the research model (Fig. 2).

4.1. Data collection

In this study, two products (Philips Norelco HQ7310 Electric Shaver and NUXE face cleansing Gel e 200 ml, P1 and P2 respectively) were

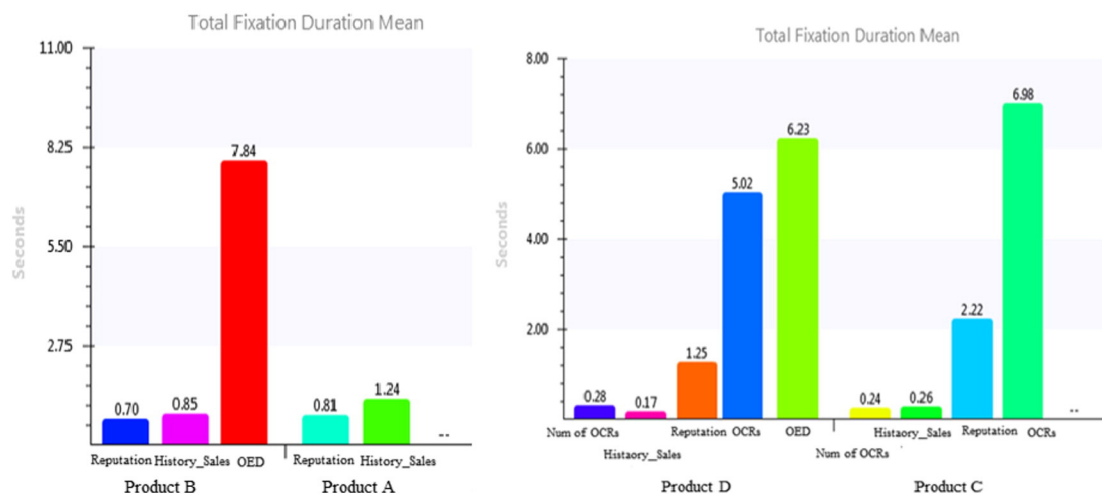


Fig. 4. Total fixation durations of participants on the AOIs in Experiment Set 1.

Table 3
T-test results of Experiment Set I.

Group 1 (without OCRs)					Levene's test for equality of variances		T-test for equality of means (unequal variance)				
	Median	N	Mean	Decision	F	Sig.	t	d.f.	Sig. (2-tailed)	Mean difference	Std. error difference
Long fixation duration	4.06	15	0.7143	Product B: 14 Product A: 1	12.839	.001	−4.563	19.920	0.000	−0.6476	0.1419
Short fixation duration		14	0.0667	Product B: 4 Product A: 10							
Group 2 (with OCRs)					Levene's test for equality of variances		T-test for equality of means (unequal variance)				
	Median	N	Mean	Decision	F	Sig.	t	d.f.	Sig. (2-tailed)	Mean difference	Std. error difference
Long fixation duration	4.43	17	0.8000	Product D: 16 Product C: 1	5.267	.030	−5.086	12.576	0.000	−0.7412	0.1271
Short fixation duration		10	0.0588	Product D: 2 Product C: 8							

selected to explore the effect of OED. Each homogenous product was used as the unit of analysis. Data collection was conducted in November 2013. We retrieved products of the same kind from Taobao.com and obtained an initial sample comprising 825 shaver sellers and 133 cleansing gel sellers. For each product, we collected the following fields: sales, historical sales, reputation, price, and shipping cost, with the latter two variables summed as cost to explain the expense by customers. Seller-level information, including feedback rate and score, were also collected.

To determine OED, we manually filled in the variable OED. We opened each product webpage to determine whether online reviews were embedded in the product description. If no reviews were embedded, the value of OED was recorded as 0; otherwise, it was assigned a value of 1.

4.2. Data analysis and results

Data analysis was performed via hierarchical multiple regression to verify the proposed model. Table 6 shows the descriptive statistics of the Philips Electric Shaver and the NUXE Face Cleansing Gel. Reputation, Sales, and History_Sales were ln-transformed to prepare them for the data analysis. To test the moderating role of reputation proposed in H2b, we added interactive items to the model [20,41]. To reduce the collinearity effect of the moderator, the variables of OED and reputation were standardized and multiplied to test the moderating functions. The main results are presented in Tables 7 and 8.

Table 7 summarizes our empirical analysis. The models for both products have a favorable fit with a highly significant likelihood ratio ($p < 0.01$) and adjusted R^2 value (0.339 and 0.446). For each product, Model 1 only included variables without moderating role testing, whereas Model 2 tested the moderating role of reputation. The variance inflation factors for the variables in all models were less than four, which indicated the absence of collinearity.

For both products, the models showed strong evidence to support that OED was highly related to sales. The linear coefficients ($\beta_{M1, P1} = 3.028, p < 0.01; \beta_{M2, P1} = 1.888, p < 0.01; \beta_{M1, P2} = 0.343, p < 0.1; \beta_{M2, P2} = 0.421, p < 0.05$) of OED were significant and supported the hypothesis that the embedding of online reviews in product descriptions could help increase sales. Therefore, H1b was supported.

The regression results for the variable of reputation were largely consistent with the findings in literature. High product sales could be achieved when the reputation of the seller was high ($\beta_{M1, P1} = 0.034, p < 0.1; \beta_{M2, P1} = 0.020; \beta_{M1, P2} = 0.116, p < 0.05; \beta_{M2, P2} = 0.114, p < 0.05$). For P1, reputation did not have a significant effect in Model 2 but showed a moderating effect. Therefore, H2a was supported.

To explore H2b, we examined the R^2 changes in the models (Table 7). For P1, compared with that of Model 1, the R^2 of Model 2

was significantly improved (Sig. F Change = 0.000), which indicated that interactive variables had a certain rationality and explanatory power. Similarly, for P2, the coefficients of the interactive terms in Model 2 were taken to identify the moderating role of reputation. A high reputation highlighted the effect of OED on sales (Sig. F Change = 0.012). Therefore, H2b was supported.

4.3. Discussion

With the sales data from Taobao.com, Study 2 supplemented the first study by providing actual evidence for our primary hypothesis. Within the actual content of product web pages, this study verified the importance of OED in making purchasing decisions. Several findings of this empirical study may be of interest for further research.

First, OED can significantly affect the sales of goods (H1b). Therefore, embedding online reviews into product descriptions can effectively improve sales. In addition, OED has a significant positive effect rather than a negative effect on sales. This result indicates that the addition of actual online customer reviews with annotations into the product descriptions can help boost sales. Compared with OCRs, OED provides a faster, concentrated, and salient approach to understanding product features through the perceptions of other customers. The findings explore an active way for sellers to utilize online reviews, instead of waiting passively for customers to read them.

Second, reputation is proved to be a significant antecedent of sales (H2a). This finding is consistent with that of Xu, Lin, and Shao [46], who found that reputation helps improve the sales of e-shops. Customers in an online context cannot inspect, touch, and assess the quality of goods. Reputation is a tool that reflects the quality of goods, and customers tend to believe the sellers who have received high ratings from other buyers.

Third, reputation moderates the influence of OED on sales (H2b). This result indicates that a high reputation could strengthen the effect of OED on sales. In other words, OED demonstrated in a high-reputation e-store has a significant impact on the purchasing decisions of consumers. Therefore, sellers with a high reputation should utilize the existing online reviews effectively. Instead of reading OCRs by

Table 4
Decision count.

Decisions	Without OED	With OED	Total
High reputation	Product 1: 6	Product 2: 24	30
Low reputation	Product 3: 14	Product 4: 16	30
Total	21	39	60

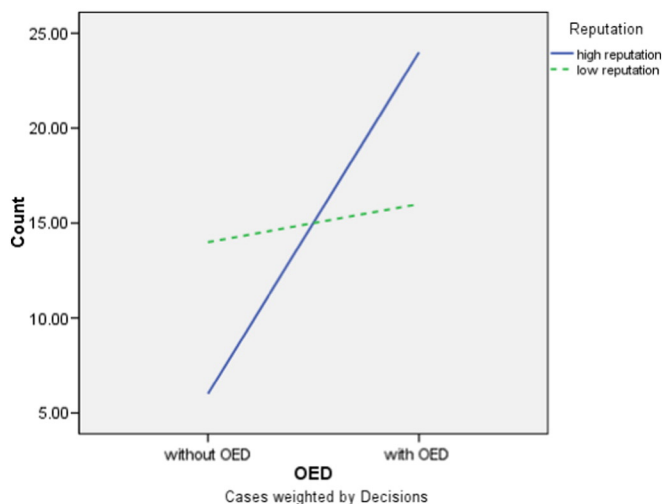


Fig. 5. The moderating role of reputation.

customers themselves, sellers could benefit from packaging the featured online reviews with annotations and placing them in a salient position.

5. Implications

5.1. Theoretical implications

This study makes several academic contributions. First, we extend the saliency effect to an e-commerce context by applying it to online reviews. Building on the implication of paying attention to the displays in salient positions, we extend the scope of saliency effect by associating them with online reviews, especially OED. Similar to item or target saliency effects in the marketing or psychology fields [6,23,24,35], we find that customers intend to pay attention to and believe the concentrated and annotated online reviews that embed in a compelling position when they are reading product details.

Second, we are one of the first studies to examine the role of OED from an experimental perspective. Prior investigations generally focus on the effect of typical online reviews [8,21,40,52] by empirical approaches, but ignore OED. We address this gap and contribute to emerging research by showing that customers consider OED a helpful and salient tool for making purchasing decisions. Unlike other empirical studies, our research explores the effects of OED by combining an eye-tracking experiment with an empirical study. In line with the eye-tracking approach, we first aim to emphasize the necessary and salient role of OED in consumer decision making. We then focus on the influence of OED by using empirical data. By performing a controlled experiment and analyzing OED in a real-world context, we demonstrate that OED can help consumers in making purchase decisions and produces a significant positive effect on sales performance.

Third, we supplement the findings of previous studies on the roles of reputation. On the one hand, we verify that reputation is an important factor that can influence sales as indicated in previous research [18,38]. On the other hand, by showing that products with OED are preferred by customers if the overall reputation of the seller is high,

Table 5
Chi-square test results of Experiment Set II.

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	4.800	1	0.028
N of valid cases	60		

0 cells (0.0%) have an expected count less than 5. The minimum expected count is 10.00.

Table 6
Descriptive statistics of products.

Electric shaver (P1)				
Variables	Min	Max	Mean	Std. dev.
$\ln(\text{Sales})$	0	8.7581	0.5151	1.1245
OED	0	1	0.0710	0.1292
Cost	275	788	434.3590	115.3552
$\ln(\text{Reputation})$	0	12.5542	6.2444	2.4915
$\ln(\text{History_Sales})$	0	13.30	3.1510	4.2963
$\text{OED} \times \text{Reputation}$	-15.71	19.26	0.1186	1.3772
Face cleansing gel (P2)				
Variables	Min	Max	Mean	Std. dev.
$\ln(\text{Sales})$	0	7.39	0.829	1.2744
OED	0	1	0.3308	0.4723
Cost	60.15	213.39	136.4420	24.7666
$\ln(\text{Reputation})$	0	10.71	3.7753	2.3654
$\ln(\text{History_Sales})$	0	6.40	0.3252	0.8380
$\text{OED} \times \text{Reputation}$	-0.77	9.83	0.0464	1.0309

we contribute to the growing body of literature by exploring the moderating effect of reputation on the relationship between OED and sales.

5.2. Practical implications

This study also provides several practical implications in the planning of page layouts and the development of marketing strategies to help sellers increase their sales and purchasing conversion rates in an e-commerce platform. First, customers tend to place a higher belief on what they hear from other customers who have previously bought products from a certain seller than on the product information provided by companies or sellers [7,19]. Sellers must acknowledge the influence of online reviews on their sales. However, given the large number of online reviews available on the web, customers face difficulties in making purchasing decisions. Owing to the saliency effects and concentrated content, this study shows that when placed under this situation, OED could help consumers understand the properties of and the demand for products quickly. Therefore, the insertion of online customer reviews into product descriptions can help customers save time in making their purchase decisions, as well as help sellers improve their sales and conversion rates. Given that sellers accumulate a large number of online reviews, the use of OED has become necessary.

Second, this study reveals that OED can increase sales. However, online sellers initially have few or no online reviews because of the lack of customers. At this stage, these sellers can obtain OED from the trial reports published by other websites for the same product. In doing so, the sellers can enhance the trust of their customers toward their product and then increase their sales. When the product sales of a seller start to increase, these trial reports begin to be gradually replaced by actual online reviews.

Third, reputation moderates the relationship between OED and sales. When the credibility of an online seller is high, the persuasion power of OED and the product sales increase. The positive effect of reputation can provide those online sellers who insert online reviews in their product descriptions with a favorable opportunity to increase their sales. Therefore, embedding online reviews into product descriptions is not enough. For OED to produce a positive effect on sales, sellers, especially those who are just starting, must take each of their transactions seriously, increase their number of positive reviews, and improve their credibility and trustworthiness.

6. Conclusion

This study sheds light on a previously overlooked yet important research problem, that is, the effect of OED on online sales. As highlighted

Table 7
Model summary of the empirical analysis.

Electric shaver (P1)									
Model	Sig.	R squared	Adj. R squared	Std. error of estimates	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	0.000	0.320	0.317	0.929	0.320	96.541	4	820	0.000
2	0.000	0.344	0.339	0.914	0.023	29.125	1	819	0.000
Face cleansing gel (P2)									
Model	Sig.	R squared	Adj. R squared	Std. error of estimates	Change statistics				
					R squared change	F change	df1	df2	Sig. F change
1	0.000	0.439	0.422	0.949	0.439	25.049	4	128	0.000
2	0.000	0.467	0.446	0.969	0.028	6.560	1	127	0.012

in the eye-tracking experiment results, OED is a helpful tool for making purchase decisions, and a high reputation will strengthen the impact of OED on sales. The empirical results in Study 2 suggest that OED has a positive effect on sales. In terms of the factors that moderate the relationship between OED and sales, OED will produce a significant effect when sellers have a high reputation.

To our knowledge, this study is one of the first to examine the role of OED both experimentally and empirically. This study contributes to e-commerce literature by identifying the effect of OED on sales based on saliency effects. OED is helpful not only for customers but also for sellers because it produces a significant effect on sales. Therefore, sellers or companies in C2C platforms must consider inserting online reviews in their product descriptions. The moderating role of reputation is also validated in this study, which provides a clear understanding of the effect of OED on sales according to seller classification.

This study has several limitations. First, our sample in Study 1 mainly comprised graduate students. Thus, our findings and contributions are exploratory in nature. Future studies must be conducted by using other populations of online shopping buyers with different ages and occupations. Second, this study mainly focuses on OED as an antecedent of sales, even though other factors, such as the contents of OED and the rhetorical appeal of the notes on OED by sellers, can influence trust and sales. Therefore, the other factors that affect the credibility of OED and sellers must be investigated in future research. Third, the sample size in our empirical study was relatively small compared with the current trend in big data analysis. Future empirical research must include a large number of

goods to produce rigorous and fulfilling findings. Overall, this study makes an initial attempt to explore the influence of OED on sales.

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Table 8
Results of hierarchical multiple regression.

Independent variable: <i>ln(Sales)</i>	Electric shaver (P1)		Face cleansing gel (P2)	
	Model 1	Model 2	Model 1	Model 2
Constant	7.101*** (0.791)	7.331*** (0.779)	5.244** (2.367)	5.557** (2.321)
OED	3.028*** (0.254)	1.888*** (0.327)	0.343* (0.183)	0.421** (0.182)
Cost	−1.160*** (0.128)	−1.191*** (0.126)	−1.056** (0.478)	−1.109** (0.468)
<i>ln(Reputation)</i>	0.034* (0.020)	0.020 (0.020)	0.116** (0.046)	0.114** (0.045)
<i>ln(History_Sales)</i>	0.049*** (0.011)	0.055*** (0.011)	0.650*** (0.130)	0.377** (0.166)
<i>OED × Reputation</i>		0.164*** (0.030)		0.301** (0.117)

SE in parentheses.

* p < 0.1.

** p < 0.05.

*** p < 0.01.

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