

# On the value of second opinions: a credence goods field experiment

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## Abstract

Credence goods markets with their asymmetric information between buyers and sellers are prone to large inefficiencies. In theory, poorly informed consumers can protect themselves from maltreatment through sellers by gathering second opinions from other sellers. Yet, field experimental evidence whether this is a successful strategy is scarce. Here we present a natural field experiment in the market for computer repairs and show that revealing a second opinion from another expert does neither increase the rate of successful repairs nor decrease the average repair price charged by sellers.

**Keywords:** Credence goods, expert services, second opinions, natural field experiment

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## 1 Introduction

Credence goods markets are characterized by an informational asymmetry between the expert seller and the buyer regarding the fit between the characteristics of the good or service and the needs of the buyer (Darby and Karny, 1973, Dulleck and Kerschbamer, 2006). Classical examples of credence goods include medical treatments, various repair services or taxi rides in an unknown city (see Kerschbamer and Sutter, 2017, and Balafoutas and Kerschbamer, 2020, for recent surveys). Such markets are prone to inefficiencies and incentives for fraudulent behavior. In theory, the search for a second opinion should lead to a welfare increase for consumers (Pesendorfer and Wolinsky, 2003, Schneider and Bizer, 2017, Agarwal et al., 2019). Interestingly, there is very little field evidence on the value of second opinions for consumer welfare, however. One recent exception is Gottschalk et al. (2020) with their field study on dental care. They let an undercover customer ask for dental treatment, even though he did not need any. In one treatment, the customer noted that he had uploaded a dental x-ray to an internet platform that offers free advice, but that he had not gotten any response yet. Compared to the baseline, the dentists' overtreatment rate (as the relative frequency of recommending unnecessary treatment) decreased only slightly, but insignificantly.

In our paper, we present a field experiment where undercover customers bring a broken computer to a repair shop and ask for an actual repair, rather than a recommendation as in Gottschalk et al. (2020). Another crucial difference between the two studies regards the timing of second opinions: While in Gottschalk et al. (2020) customers raise the impression that another opinion *will be gathered* in the near future, the customers in our study reveal that a first opinion has *already been gathered*. Our setting might prompt stronger reactions on the side of credence goods sellers, as they might expect customers to make a decision between the already existing and their new offer, while in the case of Gottschalk et al. (2020) sellers might not react to the noncommittal announcement of getting a second opinion in the future. Moreover, in comparison to Gottschalk et al. (2020) we investigate two different treatments with second opinions, one with a correct recommendation and one with an incorrect one to see whether the content of the second opinion matters for the likelihood of successful repairs and the magnitude of repair prices. Finally, our field experiment extends

Gottschalk et al. (2020) to another market – repair services of products – and thus investigates the robustness of their finding of a null effect of second opinions.<sup>1</sup>

## 2 Experimental Design and Procedure

Seven mystery shoppers visited a total of 103 computer repair shops in Berlin, Bonn, Cologne and Munich (in Germany) and handed in manipulated test computers for a repair. To avoid undesired gender or age effects all mystery shoppers were in their mid to end 20ies, students, locals, and white males. In each city, the shops were randomly selected and randomly assigned to (i) the treatments and (ii) the mystery shoppers. All shops were visited only once.

Every mystery shopper was equipped with a high class, completely refurbished desktop computer worth about 750 euro. When handing it in at the repair shop, each computer was in a perfect condition besides our manipulation: we had generated over-voltage in two 8-GB RAM modules by using so-called piezo-igniters. As a result, the modules were defect and the computer was unable to boot. Such malfunctions happen regularly, albeit infrequently, in computers. According to our IT department experts should not have any issues to diagnose the problem correctly in less than 10 minutes.

We first collected data for our BASELINE treatment where the mystery shopper entered the repair shop, saying "I bought this computer used, and it does not start." and asking for a repair. We instructed our mystery shoppers to leave the shop before the expert stated a diagnosis, in order to provide moral wiggle room for the expert. Based on the results and the diagnoses from BASELINE we then designed two additional treatments where mystery shoppers mentioned a second opinion. More precisely, they added the following phrase to the BASELINE-text: In *OPINION-1* (*OPINION-2*) they said “*Another computer shop has already seen the computer and diagnosed a problem with the hardware (which is irreparable). I would rather get a second opinion and that’s why I’m here.*”

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<sup>1</sup> Another related paper is Kerschbamer et al. (2019). While their design has some similarity to ours, our paper studies the effect of revealing the opinion of another expert while theirs examines whether consumers – as non-experts – can benefit from gathering information from the internet and revealing it to experts.

### 3 Results

We collected 33 observations for BASELINE, 35 for OPINION-1, and 35 for OPINION-2. For the analysis, we excluded two shops (one in each of our OPINION-treatments) since they turned out to be specialized in software problems only.

The relative frequency of successful repairs (after which the computer works properly again) does not differ across treatments: 75.76% managed to repair the computer in BASELINE (25 out of 33 cases), 67.65% in OPINION-1 (23 out of 34 cases), and 79.41% in OPINION-2 (27 out of 34 cases). Pooling OPINION-1 and OPINION-2 to one OPINION category yields a rate of 73.53%. None of the pairwise comparisons is significant, neither when pooling nor when considering both OPINION treatments separately (Fisher's exact tests;  $p > 0.10$  in all cases).<sup>2</sup> This leads us to our first result:

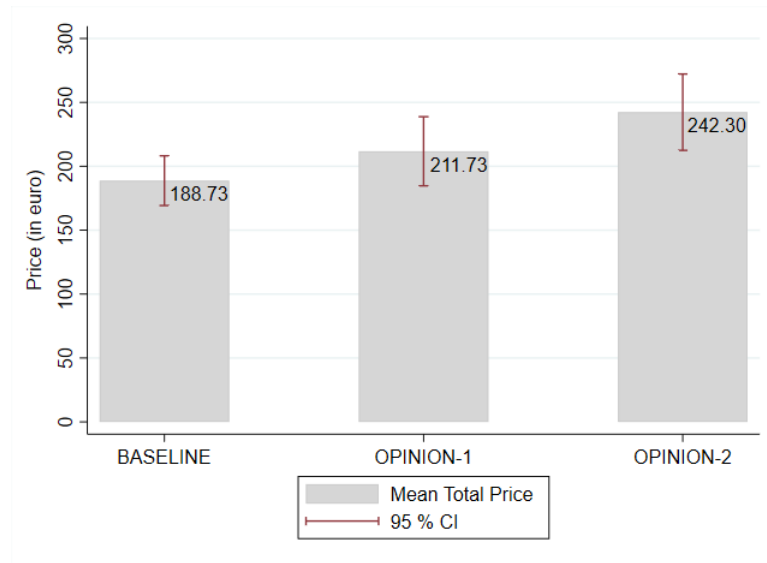
***Result 1: Mentioning that a second opinion has already been gathered does not improve the rate of successful repairs in our setting.***

As a next step we analyze whether revealing a second opinion results in lower repair prices (conditional on a successful repair). Figure 1 shows that the average repair price is 188.73 euro in BASELINE, 211.73 euro in OPINION-1, and 242.30 euro in OPINION-2 (with 228.24 euro for the pooled OPINION category).

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<sup>2</sup> We were quite surprised that a substantial fraction of the shops (about 26% across all treatments) did not manage to repair the computer. This finding is probably driven by a lack of skills on the experts' side rather than intentional mistreatment as almost everyone can open a computer repair shop without any, or very little, specific education or qualification. This view is also in line with the finding that the rate of successful repairs is not significantly different across the treatments: If the unsuccessful repairs are due to incompetence then this finding is simply an indication that our randomization was successful (yielding a roughly balanced fraction of *unskilled* experts across treatments).

**Figure 1:** Average repair price conditional on a successful repair.



**Notes:** N=25 in BASELINE, 23 in OPINION-1, and 27 in OPINION-2, respectively. Average price (in euro) indicated in the top right corner of each bar. Error bars, mean  $\pm$  SEM.

While the prices in OPINION-1 and BASELINE are not significantly different from each other ( $p=0.45$ ; Mann-Whitney U-test), the prices in OPINION-2 are significantly higher than in BASELINE ( $p=0.01$ ), and pooling both OPINION-treatments also leads to significantly higher prices than in BASELINE ( $p<0.05$ ).

**Result 2:** *Mentioning that a second opinion has already been gathered does not decrease the repair price. On average, prices are even about 20% higher when a second opinion is mentioned in our setting.*

#### 4 Discussion and Conclusion

We have shown that mentioning a second opinion does neither increase the rate of successful repairs nor decrease the repair price in our setting. To the contrary, the repair price even increases on average when the consumer reveals that another expert has already stated a diagnosis.

Our findings raise the question how they should be interpreted in the light of the theoretical models of Pesendorfer and Wolinsky (2003), Schneider and Bizer (2017) and Agarwal et al. (2019). One potential interpretation is that the expert providers are even

without treatment manipulations aware that consumers might go for a second opinion and our treatment manipulation triggered exactly the opposite effect than the one expected: Mentioning explicitly that another expert has already been visited could have raised the impression that the consumer will probably accept the next recommendation for sure, which is reminiscent of the theoretical models of Wolinsky (1993), Sülzle and Wambach (2005) and Dulleck and Kerschbamer (2006) in which experts expect that consumers on their second visit accept any recommendation for sure. If this was expected by the expert sellers, they would indeed have incentives to charge higher prices in the OPINION treatments than in BASELINE. Another potential explanation is that revealing a second opinion – especially an incorrect one as in OPINION-2 – suggests to the expert that the consumer is rather inexperienced which opens the door for mistreatment. For instance, giving away information about one’s lack of knowledge has been shown to influence credence goods experts’ behavior (see, e.g., Balafoutas et al., 2013).

Overall our results confirm – in a different context – the finding by Gottschalk et al. (2020) that second opinions do not improve market outcomes in credence goods markets. However, they question the laboratory experimental insights by Mimra et al. (2016) that second opinions increase efficiency. Still, the empirical work on the value of second opinions in credence goods markets has just begun and more research is needed to draw final conclusions.

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