Competence, Desert and Trust —
Why Are Women Penalized in
Online Product Market
Interactions?

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Why do women sellers in product markets receive lower prices than men sellers when selling the same identical products? This Article investigates the effects of cultural beliefs about competence, desert and trust on market interactions with women and men sellers. We use an experimental approach to show that the prices people are willing to pay for the exact same product (a $100 Amazon gift card) are affected by cultural beliefs about gender; when a woman sells a gift card, she is likely to receive five percent less for it, compared to when a man does. Our analysis further suggests that it is beliefs about women’s relative competence and moral entitlement that drive the gender price gap in product markets. When the participants in the experiment were presented with information that suggested that the woman seller was a competent or entitled seller, no gender price differences were found between such women sellers and their equally qualified male counterparts. Nonetheless, information about the trustworthiness of sellers did not decrease the gap between women and men sellers. This suggests that price gaps between women and men in product markets are not generated by beliefs about the trustworthiness of women and men.

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INTRODUCTION

What are the shared cultural values and beliefs about trust, competence and desert in which market transactions are embedded? This Article seeks to provide a preliminary classification of the types of moral beliefs that affect and sometimes even override profit considerations when women and men sell identical products in product markets. We focus here on gender inequality in product markets, but gender is merely an example with which we wish to preliminarily investigate and classify the cultural beliefs that generate market transactions.

Gender inequality persists in U.S. society and other western societies to this day. In the labor market, progress toward equality in employment, occupation, and earnings has been at a standstill since the 1990s. In 2014, seventy-four percent of women aged twenty-five to fifty-four were participating in the paid labor force and eighty-eight percent of men. While participating in the labor force, a considerable number of women and men still work in substantially sex-segregated occupations and jobs. Women in the United States are less likely than men to hold lucrative positions and positions with authority and decision-making power. In 2014, women’s median wages for fulltime, year-round work were only eighty-two percent of their male counterparts’ median wages. At home, women — regardless of their employment status — tend to do more household work than men.

Less is known about gender inequality and discrimination in product markets. In a recent study, using a large dataset containing all eBay auction transactions of the most popular products by private sellers between the years 2009 and 2012, we have shown that women sellers receive a smaller number of bids and lower final prices than do equally qualified men sellers of exactly

1 By desert, we refer to the shared cultural beliefs about what people deserve and about the roles of responsibility and luck in determining deservedness.
the same product. On average, women sellers receive about eighty cents for every dollar a man receives when selling exactly the same new product and ninety-seven cents when selling the same used product. These findings hold even after controlling for the sentiments that appear in the text of the sellers’ listings. In this Article, we use an experimental design to further explore these previous findings.

Why do women sellers receive lower final prices compared to equally qualified men sellers who sell exactly the same product? One possible mechanism that could generate disparities between women and men in product markets is the attribution of a lower value to a product sold by a woman than to a product sold by a man. Findings in the “Goldberg paradigm” experiment support this hypothesis; in this experiment, an article was assessed slightly less highly when participants thought it had been written by a woman rather than a man. Likewise, there is some evidence that people’s attributed status reflects on the status of the objects they possess, and that in the labor force, women’s roles tend to be culturally devalued and associated with lower pay than roles held by men. This may suggest that a lower value (and therefore a lower price) is assigned to the products that women possess and sell.

One possible mechanism that may generate the differences in the perceived value of the products women and men sell and the differences in the prices women and men receive as sellers of identical products is stereotypes. Studies have shown that most people in the United States hold very defined stereotypes about gender. People tend to view men as more “agentic” and women as more

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“communal.”\textsuperscript{8} Thus, for example, men are viewed as more competent, assertive, independent and dominant than women, and women tend to be viewed as more emotional, expressive, nurturing, sensitive and kind. Sometimes the use of stereotypes is unconscious so that they affect our perceptions, evaluations and behavior even when we are unaware of them. Studies suggest that sometimes the mere categorizing of people as women or men unconsciously primes stereotypes and as a result affects the ways in which people perceive and evaluate the other person and behaves towards her.\textsuperscript{9}

Why would buyers rely on cultural beliefs about the characteristics of owners of products in their market interactions? Market interactions tend to involve uncertainty about value and prices. People may therefore look for “clues” — like the type of owner, product, and the fit between them — to help them decide how much they are willing to pay for a product. Naturally, products may vary by the level of uncertainty associated with their value and, as a result, by buyers’ need to search for “clues.” When there appears to be a lack of fit between who the owner should be (the prototypical owner) and who the owner really is (the actual owner) a “warning sign” arises and products are perceived to be flawed, problematic or less valuable. Buyers therefore may form their evaluations and expectations on the basis of shared cultural beliefs or scripts about types of owners, products and the fit between them.

Note that peer-to-peer product market interactions tend to involve strangers who do not know each other, and therefore involve great uncertainty that leads


people to implicitly draw upon shared cultural beliefs in their interactions with each other. In other words, because the parties do not personally know each other and cannot directly assess the quality of the product or the prospective transaction, they look for cultural clues that will help them understand issues related to the product and the transaction, such as whether a seller can be trusted, whether she is capable enough, and to what degree she is entitled to receive payment. In other words, when deciding whether to buy a product and how much to pay for it, buyers ask themselves whether the individual seller deserves the money she is asking for; whether she is trustworthy; and whether the product she is selling is valuable.

The focus on product markets, in particular on identical new products that are sold in auctions by women and men sellers, makes it possible to rule out explanations for the gender price gap that are related to the quality of the products being sold. Thus, unlike in the case of the existing literature on the gender wage gap in the labor force,10 where it is hard to control for the actual (and the perceived) productivity of women and men and the quality of their work, with new products the quality of the products sold is controlled for. Thus, quality-related explanations for the gender price gap become irrelevant and only beliefs about sellers, their status and the quality of the transaction matter. In other words, the focus on product markets and on identical new products improves on the literature on the labor market, by controlling for possible “merit” differences between women and men.

Here, using a controlled experimental setting, we show that the prices people are willing to pay for exactly the same product (a $100 Amazon gift card) are affected by cultural beliefs about gender. When a woman sells a gift card, she is likely to receive five percent less for it, compared to when a man does. Our analysis further suggests that it is beliefs about women’s relative competence and entitlement that drive the gender price gap in product markets. When the participants in the experiment were presented with information that suggested that the woman seller was a competent or entitled seller, no gender price differences were found between such women sellers and their equally qualified male counterparts. Nonetheless, information about the trustworthiness of sellers did not decrease the gap between women and men sellers. This suggests that price gaps between women and men in product markets are not generated by beliefs about the trustworthiness of women and men.

10 Goldin, supra note 3; Blau & Kahn, supra note 3; Bertrand, supra note 3; Mulligan & Rubinstein, supra note 3; Current Population Survey, supra note 3.
I. TRUST, COMPETENCE AND DESERT

We wish to analytically and empirically distinguish across three types of possible relevant cultural beliefs about women and men and explore how they play out in product market interactions: trust-related beliefs, competence-related beliefs and desert-related beliefs.

For the purpose of the analysis, we use the notion of “trust” as involving shared assumed values and beliefs about the honesty, reliability and goodwill of others. In interacting with people we do not know, we rely on cultural rules in order to determine how that other is likely to behave and whether she can be trusted. Oftentimes, we draw upon stereotypes about groups (like, race, gender, age, etc.) in order to predict whether someone we do not know can be trusted. We use the notion of “competence” as involving common taken-for-granted beliefs about whether others are able enough and whether they can be confided in. As with trust, oftentimes when we interact with people we do not know we draw upon shared cultural beliefs about groups in order to figure out who is more able than others. Finally, we use the notion of “desert” as involving shared taken-for-granted values and beliefs about entitlement. When we say that someone “deserves” something, we draw upon cultural rules that distinguish between right and wrong and between responsibility and luck. We also assume that it is morally right for people to get what they deserve.

How do stereotypes about women and men play out in the context of product markets and how do they affect the prices people are willing to pay for identical products when sold by women compared to men? The literature in social psychology suggests that women are generally viewed as less competent, assertive, independent and dominant than men. Therefore, in the context of product markets women sellers may be viewed as less competent than men sellers and therefore as sellers of products of lower quality that justify lower prices compared to products that are sold by men sellers. The literature further suggests that women tend to be viewed as less status-worthy compared to men. Thus, women sellers may also be viewed as less worthy or entitled than men sellers, and therefore receive lower prices when selling identical products. Nonetheless, it seems to follow from the existing literature about sex stereotypes that women are viewed as more trustworthy, emotional, sensitive

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11 Eagly, supra note 8; Deaux, Kite & Haines, supra note 8; Wagner & Berger, supra note 8.

and kind. Therefore, women sellers may be viewed as more trustworthy as sellers, and thus be economically compensated for that.

Interestingly, in the original eBay study, we found that whereas on average women sellers received about eighty cents for every dollar a man received when selling exactly the same new product, they received about ninety-seven cents when selling the same used product. It is possible that what reduces the price gap in the context of used products (as compared to new products) is that potential buyers trust women’s account of the condition of used products more than they trust men’s — even when they enjoy the same reputation on eBay.

In sum, the purpose of the following experiment is to preliminarily investigate the types of moral beliefs that affect market interactions between women and men in product markets and to empirically distinguish between the effects of cultural beliefs about trust, competence and desert on the prices women and men sellers receive.

II. Methodology

To test for the gender price gap and for the effects of the different types of cultural beliefs that generate price differences between women and men sellers, we conducted an experiment on Amazon Mechanical Turk (AMTurk). AMTurk is a U.S.-based marketplace run by Amazon.com. The experiment participants were asked to report the amount of money they were willing to pay for an Amazon $100 money-value gift card (“How much are you willing to pay?”) when sold by either Alison or Brad. Money-value gift cards were chosen because they are relatively neutral in terms of the gender associated with them, and because they involve a relatively low level of uncertainty regarding their value; it is relatively easy for people to evaluate the worth of a $100 gift card (compared to the worth of other products like paintings).

In order to test for the effects of cultural beliefs about trust, competence and desert, the participants in the experiment were randomly assigned to one of eight groups (the experiment consisted of 2X4 experimental conditions). Four groups of participants were told that the Amazon $100 money-value gift cards were sold by Alison, and the other four groups were told that the cards were sold by Brad. In the two control groups (cards were sold by Alison in one group and by Brad in the other), participants were presented with a photo of an Amazon $100 money-value gift card and were told that either Brad or

13 Eagly, supra note 8; Deaux, Kite & Haines, supra note 8; Wagner & Berger, supra note 8.
14 Kricheli-Katz & Regev, supra note 4.
Alison were “selling this gift-card” and were later asked to report the amount of money they would be willing to pay for it.

In the two trust conditions (cards sold by Alison in one group and by Brad in the other), the trustworthiness of the seller was manipulated: sellers were presented to the research participants as trustworthy (compared to the control groups in which no evidence for the trustworthiness of the sellers was presented). They were told that this seller was rated in 100% of 1021 transactions as trustworthy. In the two competence conditions (cards sold by Alison in one group and by Brad in the other), the competence of the seller was presented to research participants as high (compared to the control groups in which no evidence for the competence of the sellers was presented). They were told that this seller was rated in 100% of 1021 transactions as competent. Finally, in the two desert conditions (cards sold by Alison in one group and by Brad in the other), participants were told that the seller had received several of these gift cards as an appreciation gift for his/her volunteer work at AmeriCorps, but he/she did not need them (in the control groups, no evidence for desert was presented).

We set up the experiment to test whether participants would be willing to pay lower prices to women sellers compared to men (the control groups) and, if so, which of the three types of beliefs (trust, competence and desert) explains the gap between the prices participants are willing to pay women compared to men. If we find that telling participants that the individual woman selling the product was competent, trustworthy or entitled decreased the gender price gap between her and an equally competent, trustworthy or entitled man seller, it would imply that it was cultural beliefs regarding these attributes that generated the gender price gap to begin with. In other words, if telling participants that the individual woman seller is competent, for example, would decrease the price gap between her and an equally competent man seller (compared to the price gap obtained in the control group), then we would be able to conclude that it was cultural beliefs about women’s competence that generated the gender price gap to begin with.

Altogether 341 people participated in the experiment. 175 were told that Brad was selling the gift card and 166 were told that Alison was selling the gift card. Out of the 175 participants who were told that Brad was selling the gift card, 57 were in the control group, 35 were in the competence condition, 47 were in the desert condition, and 36 in the trust condition. Out of the 166 participants who were told that Alison was selling the gift card, 59 were in the control group, 30 were in the competence condition, 49 were in the desert condition, and 28 in the trust condition.
III. Results

In Table 1, we provide the descriptive statistics for the variables used in the analysis.

Table 1: The Age and Gender of Participants, by Condition  
(sd. in Parentheses; AMTurk)

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Competence</th>
<th>Desert</th>
<th>Trust</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>36.03</td>
<td>36.03</td>
<td>39.02</td>
<td>38.27</td>
<td>37.29</td>
</tr>
<tr>
<td></td>
<td>(9.922)</td>
<td>(11.08)</td>
<td>(12.00)</td>
<td>(25.82)</td>
<td>(14.90)</td>
</tr>
<tr>
<td>Female</td>
<td>0.578</td>
<td>0.523</td>
<td>0.448</td>
<td>0.453</td>
<td>0.507</td>
</tr>
<tr>
<td></td>
<td>(0.496)</td>
<td>(0.503)</td>
<td>(0.500)</td>
<td>(0.502)</td>
<td>(0.501)</td>
</tr>
<tr>
<td>N</td>
<td>116</td>
<td>65</td>
<td>96</td>
<td>64</td>
<td>341</td>
</tr>
</tbody>
</table>

Altogether 173 women and 168 men participated in the experiment and their average age was 37.29. Their median annual income was between $37,500 and $49,999.

In the following Figure, we report participants’ willingness to pay for the $100 gift card (their answer to the question “How much are you willing to pay?”), by the gender of seller and the experimental condition.

Willingness to Pay for $100 Gift Cards, by Sellers’ Gender and Experimental Condition (AMTurk)
Likewise, in Table 2, we report participants’ willingness to pay for the $100 gift card, by the gender of seller and the experimental condition.

**Table 2: Willingness to Pay for $100 Gift Cards, by Sellers’ Gender and Experimental Condition (AMTurk)**

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Competent</th>
<th>Trustworthy</th>
<th>Worthy (desert)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Seller</td>
<td>87.82**</td>
<td>88.00</td>
<td>88.89*</td>
<td>82.26</td>
</tr>
<tr>
<td>Female Seller</td>
<td>83.78**</td>
<td>87.63</td>
<td>83.57*</td>
<td>80.12</td>
</tr>
<tr>
<td>N</td>
<td>116</td>
<td>65</td>
<td>64</td>
<td>96</td>
</tr>
</tbody>
</table>

***= 0.01 , **=0.05 *=0.1 (for differences between women and men sellers)

We see that in the control condition, the average willingness to pay (WTP) for the gift card when sold by a woman was $83.34, whereas the average WTP for the same card when sold by a man was $87.42 (p<0.05). These results experimentally support the findings of a price gap between women and men in product markets, and suggest that a lower value is assigned to products when sold by women than by men. Interestingly, in the original eBay study,15 in an OLS (ordinary least squares) regression model predicting the final price in auctions (log transformed) on eBay (2009-2012), women selling money-value gift cards obtained 6.8% less, on average, than men sellers did for the same gift cards (p<0.001, N=10,979, all control variables added, including the venue at which the gift card can be used). The results in the control condition support the findings found in real-world market data and suggest that women sellers receive lower prices for selling exactly the same gift card, compared to men sellers.

But what are the mechanisms that drive these results?

In the trust experimental condition, the average WTP for the gift card when sold by a woman was $83.57, whereas the average WTP for the same card when sold by a man was $88.89 (p<0.1). In other words, the trust manipulation (making sellers appear to be trustworthy) did not reduce the price gap between women and men, but rather slightly increased prices for both women and men, compared to the control group. This suggests that people are willing to pay more when they think that sellers are trustworthy. Nonetheless, these results also suggest that cultural beliefs about gender and trust (whether women and men are perceived to be trustworthy) are not the mechanism that drives the differences in prices between women and men in product markets. In other words, telling participants that women were trustworthy did not decrease the gender price gap compared to the control group. Thus, we can conclude

15 Id.
that it is not beliefs about the trustworthiness of women that generated the
gender price gap to begin with. These results fit with the literature about sex
stereotypes that shows that women in general are believed to be trustworthy.

In both the desert and the competence conditions, no statistically significant
differences were found between the prices participants were willing to pay
for products when sold by women, compared to when sold by men. In other
words, the competence and desert manipulations (making both the female
and the male sellers appear to be competent or entitled) both eliminated the
price gap between women and men. This suggests that cultural beliefs about
the greater competence and entitlement of men (compared to women) drive
the differences in prices between women and men in product markets.

It should be noted that competence, trustworthiness and desert all affected
the average prices people are willing to pay (and not only the price gap between
women and men sellers), so that participants were willing to pay more under
the competence and trust conditions (compared to the control group), and
less under the desert condition.

Taken together, the results from the experiment suggest that on average,
people are willing to pay less for $100 gift cards when sold by women,
compared to men. This tendency is driven by cultural beliefs about women
sellers being less competent and entitled than men sellers. Thus, the gender
differences in prices disappear when potential buyers are presented with
concrete information about the individual seller being competent or entitled.
When, however, potential buyers are presented with information about the
individual seller being trustworthy, the price gap between women and men
sellers remains. This is probably because women are believed to be trustworthy
to begin with.

IV. DISCUSSION

Our analysis suggests that cultural beliefs about gender affect the prices
people are willing to pay for exactly the same product. When a woman sells
a $100 gift card, she is likely to receive five percent less for it, compared
to when a man does. Gift cards are relatively neutral in terms of the gender
associated with them, and they involve a relatively low level of uncertainty
regarding their value.

Naturally, market interactions involve cultural beliefs not only about
gender, but rather also about other characteristics of sellers, like their race,
age, sexual orientation, class, etc. Thus, for example, in a field experiment
conducted by Ian Ayers and others, baseball cards were sold in auctions on
In the ads, the photo showed either a dark-skinned/African-American hand or a light-skinned/Caucasian hand holding the card. When cards were held by African-American sellers, they were sold for approximately twenty percent ($0.90) less compared to the cards held by Caucasian sellers. Gender disparities are therefore only an example of the ways in which cultural beliefs about groups of people may generate disparate market outcomes.

Note also that the disparities found here are disparities in online type marketplaces, in which sellers and buyers do not interact face to face with each other so that characteristics like sex, race and age become less apparent compared to real-world interactions between people who see each other. Such online interactions could have had the potential of reducing biases. Nonetheless, it seems that even online people sex-categorize others. Why would online buyers and sellers sex-categorize each other in their online market interactions?

Together with race and age, gender is a primary category of difference in the United States. This means that people automatically and intuitively gender-categorize every person they encounter and later rely on these categories in their perceptions and evaluations of others. Indeed, we rarely leave encounters, however short they are, without determining whether the person we have met was a woman or a man. In real-world human interactions, gender categorization is based on salient physical features that are easily and quickly recognized. In the online world, however, these are less evident. The fact that people have little difficulty in finding clues for the gender of individuals with whom they interact online is indicative of how important gender categories are for the way in which people make sense of their interactions.

The results further suggest that it is beliefs about women’s relative competence and entitlement that drive the gender price gap in product markets. When research participants were presented with information that suggested that the woman seller was a competent or entitled seller, no gender price differences were found between such women sellers and their equally qualified male counterparts. Nonetheless, information about the trustworthiness of sellers did not decrease the gap between women and men sellers. The experiment featured a between-person research design in which participants were exposed to only one gift card sold by either Alison or Brad and therefore were not asked to compare the two. Hence, it seems that the disparities found were the

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result of unconscious processes and not of a conscious comparison between a male and female seller.

When discrimination is unconscious it raises the question of how it can be addressed by policymakers. One possible intervention would be to require online market platforms (like eBay) to anonymize their users’ gender and other suspect characteristics. In a study by Claudia Goldin and Cecilia Rouse, the effect of gender-anonymized recruitment practices in symphony orchestras in the United States was observed. In the 1970s and 1980s many symphony orchestras started to use blind auditions with a screen to conceal the identity of the candidate from the jury. Whereas before the change in practice, women accounted for only five percent of the musicians in orchestras, toward the end of the 1990s the figure rose to about twenty-five percent. Anonymizing gender in online marketplaces would probably reduce some of the gender disparities we observe. Nonetheless, because gender cannot be anonymized in real-world interactions, and because in many online interactions we would not even want it to be anonymized, it is unclear whether such a solution is desirable.

Note also that, unlike in the case of the labor market, with product markets we tend not to regulate private transactions and we usually do not prohibit discrimination. The results of this and similar studies suggest, however, that disparities in product markets tend to be very similar in magnitude to those found in the labor market. They therefore call for a reconsideration of the appropriateness of legal protection from discrimination in peer to peer product markets and the possible ways for legal intervention. The effects that prohibiting discrimination would have on material outcomes, dignity and autonomy of sellers, buyers and third parties should be further explored as well as the feasibility of legal enforcement. The legal responsibility of market platforms (like eBay) to prevent their users from discriminating should be also evaluated.
