The Impact of Online Information on the Purchase of Certified Used Cars

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Secondary markets have adopted a number of quality signaling mechanisms such as certification to reduce information asymmetries between buyers and sellers. With the growth of the Internet, consumers seeking to purchase used goods additionally have access to a plethora of information on various aspects of their purchase process. What then is the impact of such information on the value of conventional quality-signaling mechanisms? We draw upon a unique and extensive dataset of consumers who obtained vehicle related information from online sources to examine its impact on the choice of certification, as well as the price paid.

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EXTENDED ABSTRACT

Several markets are characterized by significant information asymmetries between buyers and sellers, with sellers possessing superior information to buyers about the true quality of their offerings. Sellers of low quality products therefore have an incentive to misrepresent the quality of their offerings. Lacking adequate information to distinguish higher quality from lower quality products, buyers are unwilling to pay a premium for higher quality products. To prevent the ensuing market collapse, these markets have resorted to quality-signaling mechanisms such as certification to help reduce the frictions associated with such information asymmetries. As is well known, when the quality signal issued by sellers of the product or service is costly, in a rational equilibrium, prospective buyers could use these signals to discriminate between products of differing quality. While such quality signaling mechanisms are valuable to both buyers and sellers in such markets, their value to consumers, and the competitive advantage they provide to sellers, depends crucially on the nature and extent of the information asymmetries in these markets. Signaling mechanisms are more valuable and result in higher returns when buyers face greater difficulty in acquiring information about underlying product attributes. This is especially true in the market for used goods.

Over the last few years the growth of the Internet has dramatically increased the availability of information to prospective buyers across a number of markets. Consumers now, have access to a wide range of information regarding products and services, as well as alternatives, to make purchase decisions. Such information can potentially help bridge the information gap between buyers and sellers, and significantly reduce the information asymmetries in these markets. The abundance of information available through various online sources brings to the fore questions regarding the salience and the value of conventional quality signaling mechanisms.

We study one specific used goods market- the market for used cars. Given the complexity of the offerings and the difficulty in determining quality, certification, in particular, plays a very important role in reducing the frictions inherent in the market for used cars. While certification has traditionally been valuable to buyers as well as sellers of used cars, the growth of the Internet, and the emergence of auto-retailing websites in particular, has dramatically increased the amount of information available to consumers seeking to purchase used cars. The changing landscape of used vehicle markets makes it an ideal setting to understand the impact of online information on consumers’ choice of certification, and price paid—issues that would be of considerable interest to academicians as well as practitioners.

An interesting feature of the used car market is that, unlike markets where quality signals such as certification are provided by independent third parties, certification for used cars is largely provided by the dealers themselves. This is likely to increase the salience of online information for consumers who may no longer need to rely on certification as a source of vehicle information. We draw upon a unique and extensive dataset of over 12,000 consumers who obtained vehicle and transaction related information from online information sources in their used vehicle purchase process to examine the impact of their information acquisition on their choice of certified used cars, as well as the price paid. We use a matched sample of certified and non-certified purchases to estimate the impact of online information on certification and price, while addressing issues regarding treatment effects, error covariance and endogeneity within a three stage least squares estimation framework. Additionally, we control for several factors including vehicle characteristics, buyer demographics, experience and psychographics, unobserved vehicle quality, additional warranties, and seller type and location.

We find that while consumers pay a premium for certified vehicles compared to their uncertified counterparts, online information has different impacts on the price paid for certified versus non-certified purchases. In particular four different categories of online information are found to be valuable to consumers seeking to purchase used cars—reliability information, information about used-car features, transaction-related information, and information about alternatives. Interestingly, we find that the two product-related information categories—reliability and features-related information—decrease the demand for certification. In addition, these information categories increase the price paid by consumers for non-certified cars. In contrast, the two price-related information categories—transaction and alternatives-related information—increase the demand for certified used cars; and decrease the price paid for non-certified cars. Thus, we find that reliability and features-related information serve as a substitute to certification, while transaction and alternatives-related information serve as a complement to traditional certification of used cars.

This study makes several important contributions. It is among the first to characterize the various categories of online information sought by consumers seeking to purchase used cars. More importantly, our study is among the first to disentangle and examine the implications of these different types of information for the quality signaling mechanisms adopted by sellers of used cars. We show that the availability of different types of online information has a significant impact on consumers’ choice of certified used cars and price paid. A key implication then is that, as long as the cost of providing different categories of information is low, online infomediaries can have a significant impact on buyer as well as seller behaviors in the traditional market for used cars. In particular, traditional dealers selling non-certified used cars benefit when consumers obtain more transaction and alternatives-related information. On the other hand, sellers of certified used cars benefit more when consumers have increased access to reliability and features-related information. Consequently, these findings also have significant implications for dealers’ partnerships with different types of online information intermediaries.

References available upon request