



Contents lists available at ScienceDirect

Electronic Commerce Research and Applications

journal homepage: www.elsevier.com/locate/ecra

On the efficacy of imperfect public-monitoring of seller reputation in e-commerce



Silvia Bertarelli

Università di Ferrara, Ferrara, Italy

ARTICLE INFO

Article history:

Received 24 November 2014
 Received in revised form 25 November 2014
 Accepted 25 November 2014
 Available online 2 December 2014

JEL classification:

C7
 C25
 L2
 L81

Keywords:

E-commerce
 Empirical research
 Game theory
 Online selling
 Modeling research
 Monitoring technologies
 Probit model
 Reputation games

ABSTRACT

Reputation is crucial in promoting exchanges in online markets, since it may overcome information inefficiency through successful signals of sellers' quality to less informed customers. To explore this issue, I study web sellers' reliability in business-to-consumer online transactions with reference to reputation games. Customers can gather information in online marketplaces like e-Bay through public feedback systems. In contrast, without a centralized reputation system, it is not clear how potential buyers form their beliefs. For the latter case, I provide empirical evidence on perceived reliability and its determinants for some virtual shops operating worldwide in the clothing retail sector.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Electronic commerce means no physical meeting of sellers and potential buyers, incomplete information about the seller, inability to directly verify the quality of a product and to monitor sellers' behavior in the stages of packing, shipping, and so on. In the absence of perfect information, a buyer who perceives a risk related to the likely seller's opportunistic behavior and reputation is crucial in promoting the seller's reliability and facilitating online transactions.

Reputation can be theoretically analyzed in terms of reputation games with a long-run seller and several short run buyers. It may be interpreted as a successful signal of sellers' quality to less informed potential customers. The latter form their beliefs in several ways by means of some imperfect public-monitoring devices, which are strictly influenced by the characteristics of online transactions.

Online transactions are managed in most cases by means of online marketplaces, such as e-Bay, Alibaba and Yoonx, among others, and information gathering is centrally managed by the web master of the marketplace. Electronic marketplaces are characterized by the simultaneous presence of several sellers, after they register their accounts. Buyers and sellers can evaluate their transactions by providing feedback. Customers also can obtain seller transaction histories through a public feedback system. Feedback consists of a general rating of positive, neutral, or negative for a transaction. In addition to leaving general ratings, buyers can rate specific aspects of a transaction. A buyer may review item quality to verify if it matches with the item that was received, may rate the degree of satisfaction about the seller's communication, the time it took to mail the item for receipt, and the shipping and handling charges.

Recently, several enterprises have explored the use of alternative channels for e-commerce. Increasing diffusion of independent e-commerce websites directly implemented by sellers is observed in the marketplace. In these websites, no public feedback systems are available. In the absence of an independent and well-recognized

E-mail address: silvia.bertarelli@unife.it

public reputation system, which elements drive the repositioning of confidence on the part of potential buyers are unclear.

In this article, I study reputation in online transactions as a reputation game with imperfect public-monitoring and asymmetric information related to seller's quality, especially adverse selection, from a theoretical perspective. The analysis mainly focuses on the role of reputation devices in stimulating the formation of buyers' beliefs.

Reputation mechanisms enable efficient transactions in the presence of post-contractual opportunism, in other words, moral hazard, and adverse selection as well. *Moral hazard* appears when each party in a contract may have the opportunity to gain from acting differently from the agreed conditions. In online transactions, buyers typically send money to sellers before receiving goods. They then could be tempted to keep the money and not ship the requested goods, or to ship lower quality goods than those advertised. *Adverse selection* is present in situations where sellers have more information than buyers (or vice versa) about some aspect of their ability or product quality they supply. Specifically, sellers may have different characteristics or may sell high-low quality goods, etc. Since sellers do not have an incentive to advertise both positive and negative characteristics, consumers cannot be certain about the true quality offered by each seller until they have actually bought some items. Knowing this, consumers will assume that all sellers are of average quality and will not be willing to pay more than the average price. [Akerlof \(1970\)](#) shows that, in such a situation, the highest quality sellers exit the market, while the lowest quality ones keep selling online.

Reputation mechanisms can deter moral hazard by acting as *sanctioning devices*. They can limit negative effects of adverse selection by acting as signaling devices. The role of reputation mechanisms in moral hazard settings is to constrain behavior of the best informed party, whereas the role of such mechanisms in adverse selection settings is to induce learning behavior of the least informed one ([Dellarocas 2006](#)). In real-life transactions, moral hazard and adverse selection considerations are often simultaneously present. By concentrating on the study of e-transactions for the formation of buyers' beliefs, I need to consider reputation mechanisms which are able to foster learning effects. This justifies my choice of modeling online transactions in terms of reputation games in the adverse selection framework.

From an empirical point of view, I provide some evidence on the determinants of perceived buyers' reputation. By browsing an e-commerce website, consumers can get some information. I refer to this source of information as *advertising signals*. Moreover, online consumers also evaluate sellers' reliability by gathering independent information from social communities. I define these sources of information as *social signals*. In this case, I empirically test if potential buyers exploit publicly-available information to promote information circulation from virtual shops websites in terms of their advertising signals, and from the most widespread social communities as social signals.

Previous evidence confirms that reputation effects are important in transactions conducted on web marketplaces. Specifically, reputation profiles are predictive of future performance, though eBay's net feedback statistic is not the best predictor available, according to [Resnick and Zeckhauser \(2002\)](#). [Cabral and Hortacsu \(2004\)](#) showed that negative feedbacks reported in e-Bay lower weekly sales growth rates, and exit probability were increasing the lower was reputation.

It is not clear if and when reputation acts as a sanctioning device or a signaling one, however. When concentrating on the buyers' perspective, I noted that the longer is a seller's transaction history, the higher is the buyer's willingness-to-pay ([Resnick et al.](#)

[2006](#)). Reputation effects are magnified in the case of heterogeneous goods ([Melnik and Alm 2005](#)). This confirms that perceptions of sellers' reliability in online sales includes signaling mechanisms, and this calls for further investigation into which factors are involved in the formation of beliefs.

For independent e-commerce websites, though no publicly-recognized feedback systems exist, I provide some empirical evidence on the way sellers signal their type to potential customers and how customers form their perceptions of seller reputation. Up to now, no research has been done on this issue to the best of my knowledge.

First, I conducted a survey to identify all sources of information, both internal and external, with reference to some e-commerce business-to-consumer websites operating worldwide in the clothing sector. Second, I quantitatively assess the importance of both types of signals in the construction of perceived reputation by potential buyers. Because no transaction history was available, I use survey data to estimate the probability of e-seller reputation levels with a probit model. The role of seller and social factors on the perceived reputation of the e-seller is a focus of this investigation.

The paper is organized as follows. In Section 2, I present a model of a reputation game with imperfect public-monitoring. Section 3 describes some stylized facts about some e-commerce websites involved in business-to-consumer e-commerce in the clothing sector. I also describe the survey I conducted on a sample of potential buyers related to their perceptions of seller reputation and their sources of information. I view these as relevant in the formation of reputation assessments. The econometric analysis is developed in Section 4 and conclusive comments are reported in Section 5.

2. A model of reputation in e-commerce with imperfect public-monitoring

This section presents a stylized model of reputation. I employ the *adverse selection approach*, which assumes asymmetric information related to the seller's quality. For this, I follow the approach used by [Mailath and Samuelson \(2006\)](#).

In each period, the seller can either exert high effort H or low effort L , and the buyer can decide either to buy B or not NB . When effort is high, the buyer receives a gross utility of $U > 0$, and zero otherwise. Net utility is obtained as gross utility less price, which is equal to R . Revenues are equal to R if the buyer decide to buy independent of the effort exerted by the seller. Costs are equal to C when high effort is given, and zero otherwise. [Fig. 1](#) shows the players' payoffs.

Low effort L is strictly dominant for the seller, while higher payoffs for both players are achieved if the seller exerts high effort. In the perfect monitoring game of complete information, (L, NB) is the unique equilibrium outcome. The equilibrium outcome may change to (H, B) if the game is infinitely repeated, provided that the seller is sufficiently patient.

The adverse selection approach allows the study of the situation where the buyer is uncertain about the seller's payoffs. Incomplete information implies that past behavior influences expectations of future behavior and can be interpreted as an investment on reputation. Specifically, the seller develops a *reputation* for playing H , if she persistently plays H . This may be initially costly for the seller if the buyer is not immediately convinced that she will play H and hence plays NB for some time. However, the subsequent payoff can make this investment worthwhile for a sufficiently patient seller.

Suppose there is a positive probability assigned by the buyer to the seller being a *commitment type* who always plays H . Even a tiny

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات