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Incorporating the Time Order Effect of Feedback in Online Auction Markets through a Bayesian Updating Model

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Abstract

Online auction markets serve a large number of transactions every day. The transaction data in auction markets are useful for understanding the buyers and sellers in the market. Previous research has shown that sellers with different levels of reputation, as shown by the ratings and comments left in the feedback system, enjoy different levels of price premiums in their transactions. Feedback scores and feedback texts have been shown to correlate with buyers' level of trust in a seller and the price premium that buyers are willing to pay (Ba and Pavlou 2002; Pavlou and Dimoka 2006). However, existing models did not consider the *time order effect*, which means that a feedback posted more recently may be considered more important than a feedback posted less recently. This paper addresses this shortcoming by (1) testing the existence of the time order effect, (2) proposing a Bayesian Updating Model to represent the buyers' perceived reputation considering the time order effect and assessing how well it can explain the variation in buyers' trust and price premium. In order to validate the time order effect and evaluate the proposed model, a user experiment was conducted and real-life transaction data were collected from the eBay online auction market. Our results confirm the existence of the time order effect, and the proposed model better explains the variation in price premium than the benchmark models. The contribution of this research is twofold. First, we verify the time order effect in the feedback mechanism on price premiums in online markets. Second, we propose a model that provides a better explanatory power on price premium in online auction markets than existing models by incorporating the time order effect. The study advances our understanding of the feedback mechanism in online auction markets.

Keywords: Auction markets, price premium, Bayesian Updating, game theory, time order effect, trust

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