Institutional Feedback Technologies in Online Marketplaces: An Investigation of Feedback Text Comments, Trust, and Price Premiums

Paul A. Pavlou
University of California - Riverside

Angelika Dimoka
University of Southern California

ABSTRACT

For online marketplaces to succeed and prevent a market of ‘lemons’, their feedback technologies must be able to differentiate among sellers and generate price premiums for trustworthy ones (as returns to their superior feedback). However, the literature has solely focused on positive and negative feedback ratings, alas ignoring the role of feedback text comments. These text comments are proposed to convey useful tacit knowledge about a seller’s prior transactions that cannot be described by simple positive and negative ratings. This study examines the ‘hidden’ content of feedback text comments and its role in building buyer’s trust in a seller’s benevolence and credibility. In turn, benevolence and credibility are proposed to influence the price premiums that a seller receives from buyers.

This paper utilizes content analysis to analyze over 10,000 feedback text comments of 420 sellers in eBay’s online auction marketplace, and match them with survey responses from 420 buyers that recently purchased products from these sellers. These dyadic data show that feedback comments create price premiums for trustworthy sellers by influencing buyer trust beliefs in a seller’s benevolence and credibility (even after controlling for the impact of positive and negative ratings). The analysis of feedback comments does provide a superior explanatory power in benevolence and credibility. Interestingly, the addition of benevolence (which has been ignored in online auctions) provides an outstanding predictive power on price premiums ($R^2 = 50\%$) compared to prior studies ($R^2 = 20\%-30\%$).

By uncovering the ‘hidden’ value of feedback text comments and the mediating role of benevolence, this study helps explain the existence and success of online marketplaces that rely on seller differentiation. The paper discusses the study’s theoretical and practical implications for better understanding the nature and role of institutional feedback technologies, benevolence, credibility, and price premiums in online marketplaces.

Keywords: Institutional Feedback Technologies, Feedback Text Comments, Trust, Benevolence, Credibility, Feedback Ratings, Online Marketplaces, Auctions, Price Premiums.

Under Preparation for a 2nd round of review in Information Systems Research

February 2006

The authors acknowledge the valuable feedback of Izak Benbasat, Mendel Fygenson, David Gefen, Ting Lie, and Carol Saunders in earlier versions of this manuscript. All remaining errors and omissions are the authors’ sole responsibility.
1. INTRODUCTION

The inherent temporal and physical separation of impersonal and anonymous online marketplaces poses major uncertainties for buyers since they mostly transact with new and often unknown sellers that have no established brand name or familiarity. To account for these uncertainties, online auction marketplaces, such as eBay, have instituted feedback technologies, which are IT systems that facilitate the collection and dissemination of information about seller past transaction behavior (Dellarocas 2003, Resnick et al. 2000).2 By publicizing information about sellers’ past transactions, these institutional feedback technologies engender buyer’s trust and reduce the risk from the community of sellers, thereby facilitating buyer-seller transactions (Pavlou and Gefen 2004). Most important, they have been shown to create price premiums for reputable sellers (e.g., Ba and Pavlou 2002, Dewan and Hsu 2004). Price premiums are essential for the survival and success of online marketplaces since lack of differentiation would force the high-quality sellers to flee the marketplace since their quality could not be signaled and rewarded, thus resulting in a market of ‘lemons’ (Akerlof 1970).

While the potential role of institutional feedback technologies has been demonstrated in the literature (see Dellarocas 2003 for a review), the literature is potentially incomplete, reflected through the low variance explained in price premiums (R² = 20-30%). This is because the literature has solely focused on quantitative (positive and negative) feedback ratings,3 ignoring the “hidden” role of feedback text comments. We argue that these text comments contain tacit knowledge that cannot be conveyed by positive and negative ratings. For example, there is a major difference between a feedback comment that suggests regular delivery versus a seller going beyond the call to satisfy a buyer’s extraordinary request (even if both comments would receive a positive rating). Similarly, there is a distinction between a text comment that suggests a slight product delivery delay versus a comment that denotes fraud, severe product misrepresentation, or contract default (even if all these comments may simply receive negative ratings). Feedback text comments are proposed to contain rich evidence of seller past transactions beyond explicit positive and negative feedback ratings, and they may thus have superior explanatory and predictive power that has not been examined in the literature. To better understand the full potential of institutional feedback technologies, this study aims to uncover and quantify the tacit nature of feedback text comments and test their potential role on trust and price premiums.

2 Following an auction transaction, the winning buyer is asked to post a feedback rating (positive, negative, or neutral) and a feedback comment of up to 80 characters of text.
3 For a detailed review of the role of feedback ratings in online marketplaces, see Dellarocas (2003) and Resnick et al. (2002).
While the potential role of feedback text comments has been suggested (Ba and Pavlou 2002, p. 256), the difficulty of assessing the meaning of numerous text comments for multiple sellers in a comprehensive study has precluded their scientific assessment. However, there is an emerging interest in the e-commerce and trust literature to capture the meaning of text arguments. For example, Kim and Benbasat (2003, 2005) examine how Internet stores can effectively design trust-building arguments to build consumer trust. Similarly, Lim, Sia, Lee, and Benbasat (2001) investigate the trust-building potential of online consumer testimonials. Extending this trend, this study undertakes a large-scale content analysis of over 10,000 feedback text comments in eBay’s marketplace to examine their potential role on two key dimensions of buyer’s trust in a seller – credibility and benevolence - controlling for the impact of quantitative ratings and trust propensity.

More specifically, we posit that feedback comments provide evidence of sellers’ extraordinary - outstanding or abysmal - credibility and benevolence in their past transactions beyond those conveyed by simple ratings. Such extraordinary comments are likely to impact trust in a seller’s credibility and benevolence by creating a surprise element (positive referral value for outstanding comments, negative referral value for abysmal ones). In turn, a buyer’s trust in a seller’s credibility and benevolence is proposed to impact the price premium a seller receives (controlling for the number of auction bids and the moderating role of product price).

More particularly, while the majority of feedback text comments is expected to be ordinary (confirming the essence of positive and negative ratings), we argue that some feedback comments may contain evidence of a seller’s extraordinary activities during its past transactions that are likely to stand out. Such extraordinary comments may convey evidence of outstanding or abysmal benevolence or credibility in its past transactions, and they are proposed to influence a buyer’s trust in the seller’s benevolence or credibility, respectively (beyond the impact of feedback ratings). Examples of outstanding benevolence comments include showing empathy to the buyer’s needs, going beyond the call, and taking initiatives for mutual benefit. Examples of abysmal benevolence comments include acting opportunistically, trying to take unfair advantage of buyers’ vulnerabilities, and engaging in fraudulent activities. Outstanding credibility comments include exceptional product delivery, straightforward product description, and genuine adherence to service promises and product guarantees. Examples of abysmal credibility comments are extreme delivery delays, contract default, and product misrepresentation. Finally, ordinary comments are those that do not provide any extraordinary evidence of benevolence or credibility. In general, ordinary comments would offer no surprise value to the buyer beyond feedback ratings, and they would simply denote that a transaction has been fulfilled properly.
The resulting structural model that delineates the process by which feedback text comments and ratings influence price premiums through buyer’s trust in a seller’s credibility and benevolence is shown in Figure 1.

Figure 1. The Proposed Conceptual Model and Research Hypotheses

The proposed model makes three primary contributions: First, it identifies, conceptualizes, quantifies, and tests the distinct role of feedback text comments as distinct trust-building means. To the best of our knowledge, this is the first study to examine the nature and role of feedback text comments. From a predictive viewpoint, this “hidden” referral value substantially adds to the variance explained in price premiums in online auctions. Price premiums have vital implications for the success of online marketplaces that rely on seller differentiation to prevent a market for ‘lemons’. Second, it identifies and validates the influential role of benevolence, thus extending the trust literature by showing that benevolence can be built through transference in impersonal environments. Third, from a descriptive perspective, it explains the process by which institutional feedback technologies shape price premiums through the full mediating role of trust (benevolence and credibility).

In what follows, Section 2 explains the essence of outstanding and abysmal benevolence and credibility feedback text comments and their proposed impact on price premiums through trust in a seller’s benevolence and credibility, respectively. Section 3 describes the study’s research method by which the feedback comments were quantified with content analysis and matched with survey responses and secondary price premiums. Section 4 presents the study’s results, and Section 5 describes the study’s contributions and implications.
2. THEORY DEVELOPMENT

2.1 Trust

Trust has long been viewed as a positive factor in buyer-seller transactions (Schurr and Ozanne 1985). The impersonal nature of online marketplaces has further increased the role of trust in facilitating buyer-seller transactions (Pavlou and Gefen 2004). Following Ba and Pavlou (2002), trust is herein defined as the buyer’s belief that a transaction with a seller will occur in a manner consistent with her confident expectations.

While there are several ways to categorize trust dimensions (Mayer et al. 1995, McKnight et al. 2002), there is a well-accepted development in the trust literature (e.g., Ba and Pavlou 2002, Borys and Jemison 1989, Doney and Cannon 1997, Ganesan 1994, Ganesan & Hess 1997, Pavlou 2002, Singh and Sirdeshmukh 2000) to distinguish between two dimensions of trust: (a) credibility (competence, reliability, and honesty), and (b) benevolence (goodwill trust).4

2.1.1 Benevolence

Even if benevolence has been examined in many literatures, it generally refers to a trustor’s beliefs about a trustee’s genuine and goodwill intentions, even given the trustee’s chance to take advantage of the trustor. First, in the management literature, benevolence is viewed as a belief that the trustee will do good to the trustor, even given the chance to act opportunistically (Mayer et al. 1995, p. 718). Similarly, in the economics literature, benevolence assumes that the trustee would behave cooperatively, even if it is economically rational for the trustee to act opportunistically (Williamson 1985). Moreover, in the IS literature, benevolence refers to the trustee’s showing empathy and responsiveness toward the trustor’s needs, and making proactive efforts to resolve the trustor’s concerns (Bhattacherjee 2002). Finally, in the marketing literature, benevolence has been described as the buyer’s belief that a seller will act fairly in a caring fashion and not take advantage of buyers, even under adverse conditions (Anderson and Narus 1990). In sum, benevolent sellers are likely to make sacrifices that exceed purely short-term profit expectations, even if the buyer cannot fully monitor their behavior. Applied to online marketplaces, benevolence refers to a buyer’s belief that a seller is motivated by factors beyond short-term profit and is genuinely concerned about its buyers’ interests. In contrast, lack of benevolence

4 Other views include a unidimensional view of trust, three distinct beliefs (competence, integrity, and benevolence) (Bhattacherjee 2002, Chen and Dhillon 2003, Mayer et al. 1995, Gefen 2002), and even four factors (including predictability) (McKnight and Chervany 2002). In buyer-seller relationships, competence and integrity often collapse under the umbrella of credibility since buyers consider the seller’s competence and integrity concurrently (Kim and Benbasat 2005).
would result in a focus on short-term profit maximization given the chance to take advantage of buyers. Benevolence is herein defined as the buyers’ belief that a seller is genuinely interested in their interests and has beneficial motives, even in the absence of specific contracts that would make seller opportunism irrational.

2.1.2 Credibility

Credibility is described as the buyers’ belief that a seller is competent, reliable, and honest, and would perform a transaction effectively, acknowledge explicit guarantees, and fulfill the contract’s exact promises (Ba and Pavlou 2002). Applied to online marketplaces, credibility is defined as the buyer’s belief that a seller will act in a competent and reliable manner and will fulfill the transaction’s explicit contractual requirements.

2.1.3 Benevolence Vs Credibility

The literature has generally posited a positive relationship between credibility and benevolence since both dimensions of trust represent favorable expectations about a trustee’s intentions. Nevertheless, these two dimensions of trust are theoretically and empirically distinct (Pavlou 2002). Credibility describes beliefs about a trustee’s intentions because of economic rationale and calculativeness (Williamson 1985), whereas benevolence describes beliefs in a trustee’s goodwill and caring intentions beyond economic rationale and contractual obligations. Credibility has thus been viewed as a lower form of trust compared to benevolence (Borys and Jemison 1989). Credibility refers to trust drawn from contracts, laws, governance mechanisms, and structural assurances, while benevolence refers to trust based on goodwill and benign intentions (Yamagishi and Yamagishi 1994). Moreover, Ganesan (1994), Gefen (2002), and Pavlou (2002) empirically examined these two trust dimensions independently and concluded that they are distinct constructs that frequently have different relationships with other variables. The proposed distinction is outlined in Table 1.

| Table 1. Theoretical and Measurement Distinction between Credibility and Benevolence |
|----------------------------------|----------------------------------|
| **Definition**                   | **Benevolence**                  | **Credibility**                  |
| The buyers’ belief that a seller is genuinely interested in their interests and has beneficial motives, even in the absence of explicit guarantees that would prevent seller opportunism. | The buyer’s belief that a seller will act in a competent and reliable manner and will thus fulfill the transaction’s explicit requirements. |
| **Sample Items**                | **Benevolence**                  | **Credibility**                  |
| 1. This seller is likely to care for my welfare. | 1. I believe this seller will deliver to me a product that matches the posted description. |
| 2. If there is a problem with my transaction, this seller will go out on a limb for me. | 2. I believe this seller will deliver to me a product according to the posted delivery terms and conditions. |
| 3. This seller is likely to make sacrifices for me if needed. | 3. This seller is likely to be honest. |
| 4. This seller is unlikely to act opportunistically, even given the chance. | 4. This seller is likely to be reliable. |
| 5. This seller is likely to keep my best interests in mind. | 5. This seller is likely to be credible. |

Still, the fact that we can reliably distinguish between benevolence and credibility does not invalidate the unitary nature of trust.
2.2 Price Premiums

Price premiums are defined as the result of high prices that lead to above-average profits (Shapiro 1983). Applied to online marketplaces, price premium is defined as the monetary amount above the average price received by multiple sellers that sell a perfectly duplicate product during a finite period (Ba and Pavlou 2002).

Drawing from the economics, marketing, and strategy literature, trust can result in above average returns (e.g., Barney and Hansen 1994, Rao and Bergen 1992, Shapiro 1983), as justified below:

2.2.1 Benevolence and Price Premiums

Benevolence first acts as a signal to buyers that a seller is likely to act cooperatively and refrain from opportunistic behavior, even given the chance. Buyers are thus willing to pay a premium to transact with a benevolent seller to guarantee a fair treatment in case the seller has the opportunity to misbehave. Second, a reputation for benevolence is a valuable asset that sellers are unlikely to jeopardize to exploit a single buyer (who would then report the seller’s opportunistic activities to other buyers through the feedback mechanism). Since benevolence provides sellers an incentive to continue their cooperative behavior and refrain from opportunistic activities, benevolent sellers would have a greater incentive to continue their cooperative behavior to protect their reputation. Recognizing these signals and the sellers’ incentives, buyers would prefer to transact with benevolent sellers; in doing so, they are likely to compensate benevolent sellers with price premiums (higher auction bids) in order to win an auction posted by benevolent sellers. The dynamic nature of the auction mechanism ensures that benevolent sellers are compensated with higher prices.

On the other hand, price discount is the monetary amount below the average price for an identical product, which exists to make up for buyers who assume above average transaction-specific uncertainty. Since trust reduces social uncertainty (Luhmann 1979), buyers would demand compensation for the increased uncertainty they are exposed to when transacting with less benevolent sellers.

Based on the aforementioned arguments, buyers’ trust in a seller’s benevolence is viewed (i) as a signal that a seller has been acting according to the buyer’s best interests, (ii) as an incentive for sellers to act benignly, and (iii) as an uncertainty-reduction mechanism. In sum, differences in a seller’s benevolence are expected to cause price differences. Therefore, more buyers would compete for the products of more benevolent sellers, thus raising auction prices relative to the prices offered to less benevolent sellers.

H1: Trust in a seller’s benevolence positively influences price premiums in online marketplaces.
2.2.2 Credibility and Price Premiums

In the dynamic pricing scheme of online auctions, buyers are also willing to compensate credible sellers with price premiums to assure satisfying transactions as credible sellers are more likely to guarantee a successful transaction. For example, Ba and Pavlou (2002) show that trust in a seller’s credibility results in price premiums for sellers in online auction marketplaces (see Dellarocas 2003 for a more detailed review). Following this literature, we hypothesize:

**H2: Trust in a seller’s credibility positively influences price premiums in online marketplaces.**

Hypothesis 2 is not new, and it has been validated by several researchers. The purpose of H2 is twofold: First, to test the study’s primary hypothesis (H1) that benevolence influences price premiums even when accounting for the established role of credibility (H2). Second, to simultaneously examine the relative impact of benevolence and credibility on price premiums. Having hypothesized the impact of benevolence and credibility (H1 and H2), we next propose how the tacit content of feedback (text) comments (controlling for the explicit content of plain feedback ratings) facilitate each of these two dimensions of trust (credibility and benevolence).

2.3 Institutional Feedback Technologies

An important component of impersonal online marketplaces is feedback received by buyers about the sellers’ past transactions. For example, eBay’s ‘Feedback Forum’ is an institutional IT system where buyers can post feedback ratings and comments about their past transaction experiences with sellers (Dellarocas 2003). Since feedback is key to influencing human behavior (Annett 1969), institutional feedback technologies have been shown to build trust in and reduce risk from the community of sellers as a group (Pavlou and Gefen 2004).

While sellers transact with a single buyer at any given time, institutional feedback technologies employ the Internet’s communication capabilities to create an environment where buyers can become aware of virtually all seller past transactions through word-of-mouth (WOM) communication. While seller-driven communication (e.g. advertising) is one-sided, WOM communication has long been regarded as the most credible, objective, and influential means for building trust (e.g., Kamins et al. 1997). This is because WOM communication among impartial buyers is unlikely to be biased or profit-driven. While the magnitude of WOM communication among impartial buyers is unlikely to be biased or profit-driven. While the magnitude of WOM communication among impartial buyers is unlikely to be biased or profit-driven. While the magnitude of WOM communication among impartial buyers is unlikely to be biased or profit-driven. While the magnitude of WOM communication among impartial buyers is unlikely to be biased or profit-driven. While the magnitude of WOM communication among impartial buyers is unlikely to be biased or profit-driven.
The trust literature has identified three primary trust-building means: (a) familiarity (Luhmann 1979); (b) similarity (Coleman 1990); and (c) institutional structures (Zucker 1986). Since familiarity and similarity are not present in most one-time transactions in impersonal online marketplaces (Pavlou and Gefen 2004), this study focuses on how the community of buyers collectively provides information of sellers’ past transactions through feedback technologies to build trust. Since trust is not based on a dyadic context but is primarily transferred from other buyers’ experiences with WOM communication, the trust-building transference process (Doney and Cannon 1997, Stewart 2003) is used to build trust through institutional feedback technologies.

Following the economics literature, institutional feedback technologies are ‘market signaling’ and ‘incentive compatibility’ mechanisms. First, feedback can be seen as a form of signaling that differentiates among sellers (Jensen and Meckling 1976). Second, the role of feedback technologies is based on a game theoretic approach, giving incentives to sellers not to act opportunistically (Ba and Pavlou 2002).

The literature has described the role of feedback technologies in terms of positive and negative ratings, which are simple means of characterizing past transaction with sellers. Buyers are likely to trust a seller with many positive ratings, which are signals for a good reputation (Ba and Pavlou 2002). Since reputable sellers have greater incentives not to cheat (since they have a better feedback to protect than non-reputable sellers), buyers are likely to trust sellers since they would not imperil their positive feedback to exploit a single buyer. On the other hand, a negative rating is a signal that a buyer was not fully satisfied with a past transaction. Since the normal purpose of online auctions is to fulfill transactions, any deviation from normality would create a negative slant. In summary, past research has shown that positive ratings build buyer’s credibility and price premiums, while negative feedback ratings are detrimental to seller credibility and price premiums.

2.4 Feedback Ratings versus Feedback Text Comments

The proposed distinction between feedback ratings and feedback text comments is supported by the knowledge management literature (see Alavi and Leidner 2001 for a review), which has mainly distinguished between explicit and tacit knowledge. While explicit knowledge can be easily exchanged without much loss, tacit knowledge needs to be processed and deliberated in people’s minds. Following this widely-held distinction, feedback ratings are a prime example of explicit knowledge that can be easily communicated among buyers, while feedback text comments are examples of tacit knowledge that is relatively more difficult to codify and transfer and they thus require cognitive deliberation by buyers to be processed, analyzed, and become useful.


2.5 Feedback Text Comments & Trust Building

Reputation is a widely-held perception toward a specific entity (Fombrum and Shanley 1990), and it has been shown to be a key antecedent of trust (Gefen et al. 2003, Pavlou 2003, Pavlou and Fygenson 2005). Lacking perfect information about a seller, buyers assess all available information to form their trust beliefs (Keser 2003). Following the logic that feedback technologies act as reputation systems (Dellarocas 2003, Resnick et al. 2000), feedback text comments are proposed to provide information about the reputation of a seller’s credibility and benevolence. This logic is consistent with Kim and Benbasat (2005) and Lim et al. (2001) who show that Internet stores can enhance buyers’ trust by posting effective trust-building text arguments.

While ‘manufactured’ trust-building arguments by Internet stores may be biased,6 text comments written by buyers in online auction marketplaces are likely to be objective, impartial, and unbiased.7 This is particularly important since buyers must have faith in the source of the feedback text comments in order to spend any time analyzing and internalizing their content. Based upon the persuasion literature (O'Keefe 2002), credible sources must be knowledgeable and unbiased. Since buyers can only leave feedback after they transact with a seller, they are deemed knowledgeable to comment upon their transaction with a seller. Also, since they are independent from the seller, they are deemed impartial. In sum, since the source of feedback text comments is deemed credible, it is likely to be persuasive to other buyers. In fact, evidence from Internet discussion forums shows that subjective buyer experiences act as credible sources of product quality information (Finch 1999).

In terms of the trust-building potential of feedback comments, if buyers have faith in the knowledgeability and impartiality of the feedback comments and have the ability to understand and analyze their content, following the persuasion literature (e.g., O'Keefe 2002), we propose that the content of feedback comments will be able to elicit changes in their (trust) beliefs. When reviewing a seller’s feedback comments, buyers may use the content of these comments to form their trust beliefs in a seller’s credibility and benevolence.8

---

6 Such trust-building arguments can be designed to follow specific principles, such as Toulmin’s (1958) model of argumentation, as described by Kim and Benbasat (2005). In contrast, feedback left by impartial buyers is unlikely to follow any specific pattern.

7 It is necessary to recognize that some feedback text comments, especially negative ones may be biased due to fear of seller retaliation (sellers also have the opportunity to evaluate buyers). The very same concern also applies to feedback ratings. Nonetheless, whether the reported feedback shapes buyer’s trust and price premiums in practice is extraneous to this bias.

8 Feedback comments may also shape other buyer beliefs beyond benevolence or credibility. However, it is beyond this study’s scope to examine other beliefs. Accordingly, the literature has studied the impact of feedback ratings primarily on trust and price premiums.
2.5.1 Feedback Text Comments & Benevolence

In addition to ordinary comments that simply denote that a transaction has been fulfilled properly, the tacit nature of feedback comments can convey the notion that a seller has previously acted in an outstanding fashion to pursue a buyer’s best interests, or acted in an abysmal manner to exploit a buyer’s vulnerabilities. By spawning a surprise element, feedback text comments can convey a reputation of outstanding benevolent behavior, which is likely to be perceived by future buyers as evidence of a seller’s benevolence. In contrast, feedback comments that convey extraordinary evidence of a seller exploiting buyers are proposed to negatively surprise buyers and thus damage their benevolence beliefs. Even if benevolence is in the eye of the beholder, surprising extraordinary comments documented by past buyers are very likely to be perceived by future buyers as a signal of a seller’s benevolence or malevolence. For example, Bikhchandandi, Hirshleifer, and Welch (1992) show that surprising pieces of information can often cause radical changes in people’s behaviors.

Even if buyers may have a slightly different understanding of what constitutes an extraordinary seller behavior, it is possible to identify a broad set of feedback comments that the majority of buyers would agree that convey extraordinary seller behaviors. Evidence from the literature suggests that people tend to rely on the opinions of others, even in the presence of their own personal information (Banerjee 1992). This behavior results in a similar set of actions across people, a phenomenon termed ‘herding’.

**Outstanding Benevolence Comments:** These text comments reflect extraordinary evidence of past goodwill seller activities. Applying the trust literature to online marketplaces, outstanding benevolence comments include: (i) a genuine interest in buyers’ interests (Schurr and Ozanne 1985); (ii) proactively resolving customer problems, viewing problems as joint responsibilities, making sacrifices, going beyond the call, and adapting to buyer needs (Anderson and Weitz 1989); (iii) committing to solidarity and taking initiatives for mutual benefit that exceed short-term profit expectations (Anderson and Narus 1990); (iv) showing responsiveness and empathy to buyer concerns (Bhattacherjee 2002); and (v) abiding to strict transaction values, social norms, and principles of conduct (Barney and Hansen 1994, Dwyer et al. 1987).

**Abysmal Benevolence Comments:** On the contrary, evidence of extraordinary malevolent comments include: (i) acting opportunistically and deliberately trying to exploit buyers (Williamson 1985), (ii) focusing on short-term
profit maximization by trying to exploit buyer vulnerabilities (Anderson and Narus 1990), and (iii) engaging in intentional product misrepresentation, quality deception, embezzlement, selling counterfeit products, and fraud.

Outstanding and abysmal benevolence text comments are not equivalent to positive and negative ratings. While there may be a positive relationship between positive/negative ratings with outstanding/abysmal comments, respectively, not all positive ratings will be necessarily accompanied by outstanding benevolence comments, nor will all negative ratings be necessarily associated with abysmal benevolence comments. First, outstanding benevolence comments surpass positive ratings to suggest evidence of goodwill past activities beyond fulfilling basic transaction obligations. Similarly, abysmal benevolence comments exceed negative ratings to suggest deliberate efforts to exploit buyers beyond a slightly delayed delivery or a slightly different product from what promised. For example, a friendly or nice seller would not necessitate an outstanding benevolence comment since there is no evidence of past goodwill behavior. Such comments would not be perceived as benevolent, but they would be perceived as ordinary. In sum, while outstanding/abysmal benevolence comments are mostly accompanied by a positive/negative rating, respectively, positive and negative ratings are not necessarily accompanied by a benevolence comment (but they are usually accompanied by an ordinary comment).

It is also necessary to distinguish between a buyer’s beliefs in a seller’s benevolence from feedback text comments. Benevolence is a buyer-specific belief about a seller’s genuine interests and beneficial motives in the absence of explicit guarantees. On the other hand, benevolence feedback text comments are left by other buyers to describe the seller’s prior transaction activities, which could be outstanding, abysmal, or ordinary. From a measurement perspective, while benevolence beliefs are subjectively assessed directly by each individual buyer with survey items, feedback comments are indirectly captured with content analysis (Table 2).

| Table 2. Theoretical and Empirical Distinction between Feedback Comments and Benevolence |
|-----------------------------------------------|---------------------------------------------------------------------------------------------|
| Benevolence Feedback Comments | Buyer’s Trust in a Seller’s Benevolence |
| Description | The buyers’ belief that a seller is genuinely interested in their interests and has beneficial motives, even in the absence of explicit guarantees that would prevent seller opportunism. |
| Sample Items | |
| 1. Outstanding Benevolence Comments (see Table 4a) | 1. This seller is likely to care for my welfare. |
| 2. Abysmal Benevolence Comments (see Table 4b) | 2. If there is a problem with my transaction, this seller will go out on a limb for me. |
| 3. NOT Ordinary Comments (see Table 4e) | 3. This seller is likely to make sacrifices for me if needed. |
| 4. This seller is unlikely to act opportunistically, even given the chance. |
| 5. This seller is likely to keep my best interests in mind. |
Whereas the literature argues that benevolence is primarily based on familiarity and prior interaction (Lewicki and Bunker 1995, Sitkin and Roth 1993), we argue that benevolence can also be engendered based on the tacit knowledge obtained by feedback comments. If these comments show evidence of a seller’s extraordinary (either outstanding or abysmal) past behaviors, buyers - through the transference process (Stewart 2003) - can get a feeling of a seller’s goodwill (or malevolent) intentions. In other words, the seller’s goodwill intentions are not determined by a buyer’s own experiences, but they are collectively obtained through the community’s combined experiences through the trust-building transference process. Feedback comments then trigger the trust-building intentionality process, which asks can I trust a seller based on its goodwill intentions? (Doney and Cannon 1997). Benevolent feedback text comments act as a seller’s collective reputation (Kreps and Wilson 1982), and they are proposed to engender benevolence by allowing a buyer to infer that the seller is likely to act in a goodwill fashion and place the buyer’s interests before its own. For example, extraordinary evidence of genuine concern for a buyer’s interests, ‘going the extra mile’, and satisfying buyers’ needs are likely to boost a buyer’s trust in a seller’s benevolence. On the other hand, abysmal benevolence comments are likely to damage the seller’s reputation for benevolence since they suggest extraordinary evidence of prior malicious behavior or past fraudulent activity.

H3a: Outstanding benevolence comments positively influence a buyers’ trust in a seller’s benevolence.
H3b: Abysmal benevolence comments negatively influence a buyers’ trust in a seller’s benevolence.

2.5.2 Feedback Text Comments & Credibility

Feedback comments are also proposed to convey evidence of a seller’s extraordinary credible behavior. A buyer’s trust in a seller’s credibility can be based on feedback comments that the seller has previously shown extraordinary evidence of behaving in an honest, competent, and reliable manner in fulfilling past transactions. On the other hand, feedback text comments can also convey extraordinary evidence of a seller failing to fulfill a transaction’s requirements by being startlingly dishonest, incompetent, and unreliable. It is important to note that credibility comments are distinct from the construct of credibility and from positive and negative ratings.

Outstanding Credibility Comments: These text comments reflect extraordinary evidence of a seller excelling in fulfilling past transactions. Applying the trust literature to online marketplaces, outstanding credibility comments include evidence of: (i) exceptional product delivery; (ii) products truthfully matching their posted description; and (iii) faithfully following contractual requirements, service promises, and product guarantees.
**Abysmal Credibility Comments:** On the contrary, extraordinary evidence of lack of credibility includes: (i) extreme delays in product deliveries, (ii) dishonesty, mere incompetence, and apparent lack of reliability; (iii) contract default on completed auctions; and (iv) failure to acknowledge explicit contractual requirements.

In addition to the antecedent role of positive and negative ratings on credibility (Ba and Pavlou 2002), we propose that credibility can also be built based on the tacit knowledge obtained by feedback text comments. The logic for the proposed impact of feedback comments on credibility is similar to the one for benevolence, replicating WOM communication through the trust-building transference process (Doney and Cannon 1997, Stewart 2003). Similarly, the seller’s reputation for extraordinary credibility is not obtained by each buyer’s personal experience, but it is collectively determined by the community of buyers (Kreps and Wilson 1982).

Credibility text comments are proposed to engender a buyer’s trust in the seller’s credibility by signaling a seller’s exceptional reputation for fulfilling transactions in a reliable manner, truthfully representing its products, and faithfully following contractual requirements. In contrast, evidence of lack of credibility surprises buyers and gives them serious doubts that the seller will even fulfill their basic transaction expectations.

**H4a:** Outstanding credibility text comments *positively* influence a buyers’ trust in a seller’s credibility.

**H4b:** Abysmal credibility text comments *negatively* influence a buyers’ trust in a seller’s credibility.

It is essential to distinguish between feedback text comments that denote benevolence and credibility from text comments that describe ‘customer service quality’, which is a broader term that captures all aspects of the buyer-seller interaction *beyond* issues of credibility and benevolence. Still, customer service can include some aspects of trust. In terms of credibility, customer service can faithfully adhere to contractual promises (e.g., answering emails within 24 hours). In terms of benevolence, customer service can go beyond strict contractual obligations to ensure full customer satisfaction (e.g., replacing a product despite a buyer’s error). This study focuses on specific evidence of credibility and benevolence within the realm of customer service.

### 2.6 Control Variables

Several effects are controlled for their impact on the study’s dependent variables. Following the literature, these control effects can be direct, indirect, or moderating effects, as described in detail below:
Feedback Ratings: Feedback ratings are either positive or negative in nature (neutral ratings are rarely given). A negative rating suggests that a transaction failed to meet a buyer's expectations. In contrast, a positive rating denotes an acceptable transaction. The literature has suggested the favorable role of positive ratings and the destructive role of negative ratings on credibility (Ba and Pavlou 2002). This is because buyers appreciate a long history of positive transactions, but they are apprehensive of sellers with negative ratings. Therefore, the potential impact of feedback ratings on both credibility and benevolence is controlled for.

Credibility has been proposed as a partial mediator between feedback ratings and price premiums (Ba and Pavlou 2002). Even if credibility and benevolence are proposed to mediate the role of feedback ratings, positive and negative ratings are still controlled for their potential direct effect on price premiums.

Auction Bids: The number of auction bids (number of unique buyer bids in a single auction) is also expected to raise price premiums given the dynamic nature of online auctions. The role of auction bids is thus controlled for.

Product Price: Ba and Pavlou (2002) showed that product price moderates the relationship between credibility and price premiums. This is because expensive products are more likely to be associated with a greater risk since the possibility of monetary loss is a function of the product's price. Since risk is a prerequisite of trust to have an effect (Mayer et al. 1995), trust is expected to have a greater impact on price premiums for more expensive products. The interaction effect between product price and credibility is therefore controlled for.

Following the same logic, we also control for a potential interaction effect between benevolence and product price. When buyers bid on expensive products, they are more likely to compensate benevolent sellers with a higher price premium to ensure fair treatment in case the seller has the opportunity to exploit them.

Past Experience with Seller: Since trust beliefs may be formed through familiarity (Gefen et al. 2003), we asked buyers whether they had transacted with the same seller prior to the focal transaction. Past experience with the seller is controlled for its potential impact on benevolence, credibility, and price premiums.

Past Experience with Marketplace: In addition to being familiar with a specific seller, we also control for each buyer's familiarity with eBay's marketplace in general on benevolence, credibility, and price premiums.

Trust Propensity: Trust is also influenced by a person's trust propensity. Propensity to trust has been shown to increase trust in online marketplaces (Pavlou and Gefen 2004), and it is thus controlled for its potential impact on buyer trust in a seller's credibility and benevolence.
3. RESEARCH METHODOLOGY

3.1 Study Setting

This study tests the proposed hypotheses in eBay’s auction marketplace for several reasons: First, eBay’s marketplace is perhaps the most successful application of online auctions that spans over 50% of the online auction market share (Wolverton 2001). Second, their feedback technologies have been extensively examined in the literature, thus allowing us to make meaningful comparisons. Third, the argument for lack of familiarity as a primary trust-building means holds reasonably well since most eBay sellers do not have a brand name and buyers transact with mostly new sellers (Resnick and Zeckhauser 2002). Fourth, online auctions provide a dynamic pricing mechanism that allows buyers to compensate sellers with price premiums/discounts.

3.2 Data Collection

Following Pavlou and Gefen (2005), the study’s research model was tested by integrating secondary data from eBay’s auction marketplace (e.g., price premiums and feedback text comments and ratings) with primary survey data from eBay’s buyers (e.g., credibility and benevolence). To identify the survey respondents and associate them with a specific transaction (to obtain the price premium) with a specific seller (to obtain feedback comments and ratings), we collected data from 1,665 completed9 auctions for ten distinct products (Ipod, n=512; movie DVD, n=341; music CD, n=312; palm pilot, n=138; digital camera, n=110; camcorder, n=92; DVD player, n=84; monitor, n=76) during May of 2005.

Following Ba and Pavlou (2002), two research assistants carefully inspected the posted descriptions of these products to assure that they were pure duplicates (brand new, sealed, and not refurbished) to avoid product-related variations within each product category. Auctions whose products did not clearly specify these characteristics were ignored. We also omitted sellers who had less than five transactions (to avoid one-time sellers that simply wanted to get rid of a product). For each completed auction, we collected secondary data on (i) the final auction price (winning bid), (ii) the seller’s feedback comments, (iii) feedback ratings, and (iv) the number of auction bids.

9 Our initial purpose was to identify posted (in-progress) auctions and calculate the percentage of completed ones as a dependent variable (in addition to price premiums). However, since over 91% of the auctions were completed and most of the incomplete ones had very high reserve prices (often higher than the average price of the completed ones), this dependent variable was not included. However, this finding indicates that the completed auctions may not represent a truncated or biased sample of all posted auctions.
Emails were then sent to the 1,665 buyers who won these auctions within a week from the time they auction was completed, inviting them to participate in a survey study. The email explained the study’s purpose and asked the invited buyers to click on a URL link which brought up the web-based survey instrument (Appendix 1). The email mentioned that the results would be reported in aggregate to assure their anonymity. To receive a high response rate and not to appear as spam, each email was personalized by referring to the product the buyer had won a few days ago. The respondents were also offered a report of the study’s results. Following two email reminders, a total of 420 responses (25% response rate) were obtained within 30 days.

Non-response bias was assessed by verifying that (a) the respondents’ demographics are consistent with current Internet consumers (http://www.4webpower.com/demographics.html), and (b) by verifying that early and late respondents were not significantly different (Armstrong and Overton 1976). Early respondents were those who responded within the first week (46%). The two samples were compared based on their demographics (Age, Gender, Annual Income, Education, Internet and eBay Experience). All t-test comparisons between the means of the two samples showed non-significant differences. Descriptive statistics are shown in Table 3.

<table>
<thead>
<tr>
<th>Table 3. Buyers’ Demographic Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average (STD)</strong></td>
</tr>
<tr>
<td>38.9 (17.1)</td>
</tr>
</tbody>
</table>

### 3.3 Measure Operationalization

#### 3.3.1 Content Analysis of Feedback Text Comments

Since the study’s independent variables (outstanding and abysmal benevolence and credibility comments) are embedded in each seller’s feedback text comments, the quantification of these comments was performed with content analysis. Content analysis transforms the underlying meaning of verbal comments into objective data using systematic procedures (Berelson 1952, Holsti 1969, Krippendorff 1980, Weber 1990). Given its ability to analyze subjective consumer responses, content analysis is a popular technique in consumer research (e.g., Kassarjian 1977, Kolbe and Burnett 1991). Following the conceptualization of benevolence and credibility comments, the feedback text comments were deemed categorical and were classified in five distinct categories:

* **Outstanding Benevolence Comments:** Feedback text comments were classified as outstanding benevolence if they reflected a seller’s genuine interest, empathy, and responsiveness to buyers’ interests. Moreover, outstanding benevolence comments showed evidence of proactive problem resolution, going beyond the call, and avoiding exploiting of buyer’s vulnerabilities. Table 4a shows a sample of benevolence text comments:
Table 4a. Examples of Outstanding Benevolence Text Comments

1. Seller went above and beyond her duty to help me. She had a solution to every problem! I am indebted to her.
2. Seller went out of his way to proactively accommodate my own bidding error!
3. Seller went above and beyond what was necessary to complete this transaction despite many problems.
4. Seller went out of his way to help me in the predicament I got into with the post office.
5. Seller went the extra distance to resolve several recurring issues with Paypal.
6. Seller willingly refunded my money even if he could get away with it (quality control issue).
7. Seller was really tolerant and did not take advantage of my bidding error.
8. Seller was extremely considerate and caring in dealing with my unique shipping situation.
9. Seller was very patient and worked with me to solve my camera glitch with the manufacturer.
10. Seller was extremely courteous and understanding in resolving a potential problem.

Abysmal Benevolence Comments: Feedback text comments were classified as abysmal benevolence if they reflected evidence of opportunistic behavior and intentional attempts to exploit buyers, such as fraud, severe product misrepresentation, and quality deception. Table 4b shows a sample of such malevolent text comments:

Table 4b. Examples of Abysmal Benevolence Text Comments

1. Seller collects payment and does not send expensive items. Buyer Beware!
2. Product’s condition profoundly misrepresented; this is a copied CD, not original; beware!!!
3. Seller never responded to my many emails. Sent my payment and never got the iPod.
4. Seller took advantage of a problematic camcorder to charge me for unnecessary accessories.
5. Computer monitor was defective, but the seller won’t reply to my e-mails.
6. Fraud! Seller never shipped the palm pilot after receiving my full payment.
7. Caution! The CD was never sent. Luckily Paypal refunded my money.
8. I paid for DVD player over a month ago. Still haven’t received it. Seller is gone!
9. I sent my payment promptly, no word back and no camcorder after 4 weeks. Beware!!!!
10. Seller overcharged me for overnight shipping ($75) because I asked for fast delivery. Shipping cost was only $18!

Outstanding Credibility Comments: Feedback text comments were classified as outstanding credibility if they included evidence of exceptional product delivery, very faithful and forthcoming product representation, and genuine dedication in following transactional promises. Table 4c shows some examples of such text comments:

Table 4c. Examples of Outstanding Credibility Text Comments

1. Extremely prompt seller. I was thrilled with the speed of the service I received.
2. Seller was extremely honest and forthcoming in providing details about the product.
3. Seller provided very prompt and considerate responses to all of my questions.
4. Seller showed a notable integrity in solving a problematic bid.
5. Seller readily offered me full refund to compensate for his shipping error.
6. Seller resolved the misunderstanding extremely quickly.
7. Seller readily replaced the broken camera and shipped me a new one with overnight mail.
8. Seller replaced a scratched DVD right away to fulfill his service promise. Extremely pleased!

Abysmal Credibility Comments: Feedback text comments were classified as abysmal credibility if they showed evidence of extreme delay in product delivery, dishonesty, incompetence, lack of reliability, contract default, and failure to acknowledge explicit contractual requirements. Table 4d presents such text comments:
Table 4d. Examples of Abysmal Credibility Text Comments

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Liar! Seller has fooled me around for 3 weeks and has still not sent my refund.</td>
</tr>
<tr>
<td>2</td>
<td>Overnight shipping took 2 weeks! Useless seller…</td>
</tr>
<tr>
<td>3</td>
<td>DVD player would not play, seller would not exchange or refund…</td>
</tr>
<tr>
<td>4</td>
<td>Product was damaged during shipping because of bad packaging. Inept seller.</td>
</tr>
<tr>
<td>5</td>
<td>Seller decided to cancel the auction because he run out of products. I followed the auction for 7 days….</td>
</tr>
</tbody>
</table>

**Ordinary Comments:** Finally, text comments that could not be classified under any of the four categories were classified as *ordinary*. Ordinary text comments could have either a positive or a negative tone, but they did not contain evidence of *outstanding* benevolence or credibility. Table 4e provides examples of ordinary comments:

Table 4e. Examples of Ordinary Feedback Text Comments

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nice product, smooth transaction, pleasure to deal with this seller all the time.</td>
</tr>
<tr>
<td>2</td>
<td>Great seller and truly fine person to deal with.</td>
</tr>
<tr>
<td>3</td>
<td>Nice seller, great job, A+, great eBay, no complaints.</td>
</tr>
<tr>
<td>4</td>
<td>Very friendly e-mails and communications. Smooth transaction.</td>
</tr>
<tr>
<td>5</td>
<td>Very good customer service. Great seller.</td>
</tr>
<tr>
<td>6</td>
<td>Items exactly as described - great customer service.</td>
</tr>
<tr>
<td>7</td>
<td>Slight delivery delay, but overall ok transaction.</td>
</tr>
</tbody>
</table>

Only the feedback text comments of the 420 sellers that could be matched against the buyer’s survey responses were coded with content analysis. The content analysis only examined the first 25 text comments of each seller, which is the default number of comments on a single webpage in eBay’s auction marketplace. First, a pilot coding of the first 50 text comments of a random sample of 20 sellers showed that the first 25 comments roughly contained the same information as 50 comments (in terms of outstanding and abysmal benevolence and credibility comments). This analysis was repeated for the first 100 comments of 10 sellers with similar findings. Moreover, ex ante personal interviews with 12 regular eBay buyers indicated that buyers rarely examine feedback text comments beyond the first webpage, while none of them ever viewed comments beyond the first two webpages (50 total responses). Most important, a distinct survey item asked the respondents to indicate how many feedback comments they examined for the seller they purchased from. 81% reported examining 25 comments (one webpage), 5% viewed 50 comments, 11% more than 50 ones, and only 3% did not examine any text comments. This suggests that the evaluation of the first 25 comments in a seller’s feedback profile is likely to provide representative information about each seller that is typically examined by buyers. Despite this sampling scheme, a total of over 10,000 feedback comments were coded.11

---

10 The number of instances of outstanding and abysmal benevolence and credibility comments recorded for the 50 text comments was roughly twice compared to when analyzing 25 text comments, and roughly 4 times higher when analyzing 100 text comments.

11 The total number of feedback comments for the 420 sellers in our sample would be over 200,000, making it impossible to analyze.
Following Kolbe and Burnett (1991), three independent coders (who were unaware of the study’s purpose) were recruited and underwent a training sequence. First, each coder was given a list of feedback comments already classified under each category (outstanding and abysmal benevolence and credibility text comments). Second, the coders were asked to find comments from sellers’ feedback comments (not from the 420 sellers) that would be classified along these five categories. Third, the three coders had a meeting with the authors where the spirit of the comments that should be coded along the five categories was discussed. This meeting integrated the comments from each coder, and a reference sheet was created for each of the five categories. Fourth, for practice, each coder analyzed 250 randomly-selected feedback comments. Following this pretest, the coders met with the authors to discuss any coding inconsistencies. This resulted in a comprehensive reference set of text comments that the coders had available during the actual coding. Finally, as part of the actual coding, each coder individually analyzed the first 25 comments for the 420 sellers, and classified these comments under the five proposed categories. To assure that the coders were not biased by a seller’s entire set of comments, all text comments were pooled together and were given to the coders in a random order. To prevent any ordering bias, each coder received a different randomized order. To ensure an independent coding and a credible inter-rater reliability score, the coders did not communicate at all during the coding procedure. Overall, each coder analyzed over 11,000 text comments (including an additional 10% duplicate comments for calculating Holsti’s (1969) intra-coder reliability), during a two-week period (1,000 text comments per day).

To ensure the objectivity, reproducibility, and reliability of the content analysis, three reliability scores were calculated: First, we used Cohen’s (1960) Kappa Statistic that is most appropriate for nominal scales. Second, a reliability index suggested by Perrault and Leigh (1989) was calculated. Following Perrault and Leigh (1989), the authors evaluate a sample of the text comments independently and compare their results with those of the coders. This reliability method has been deemed as the most accurate by Kolbe and Burnett (1991). Third, an intra-coder reliability score was calculated on 10% of the sample using Holsti’s (1969) intra-coder reliability formula. Following Holsti (1969), the coders were asked to code a random 10% sample of the comments twice, without being aware of the duplicate comments. Reliability was calculated by comparing their analysis specifically for the 10% duplicate text comments.

Different reliability scores were calculated for each of the proposed five categories, as shown in Table 5.

---

12 Following Perrault and Leigh (1989), the authors evaluate a sample of the text comments independently and compare their results with those of the coders. This reliability method has been deemed as the most accurate by Kolbe and Burnett (1991).
13 Following Holsti (1969), the coders were asked to code a random 10% sample of the comments twice, without being aware of the duplicate comments. Reliability was calculated by comparing their analysis specifically for the 10% duplicate text comments.
Table 5. Content Analysis Reliability Scores for each of the Proposed Categories

<table>
<thead>
<tr>
<th>COMMENTS</th>
<th>Cohen's (1960) Kappa Statistic</th>
<th>Reliability Index</th>
<th>Holsti’s Intra-Coder Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding Benevolence</td>
<td>.86</td>
<td>.91</td>
<td>.95</td>
</tr>
<tr>
<td>Abysmal Benevolence</td>
<td>.85</td>
<td>.89</td>
<td>.94</td>
</tr>
<tr>
<td>Outstanding Credibility</td>
<td>.82</td>
<td>.85</td>
<td>.90</td>
</tr>
<tr>
<td>Abysmal Credibility</td>
<td>.81</td>
<td>.83</td>
<td>.88</td>
</tr>
<tr>
<td>Ordinary Comments</td>
<td>.93</td>
<td>.96</td>
<td>.97</td>
</tr>
</tbody>
</table>

As shown in Table 5, all three reliability coefficients exceeded the recommended values for all categories. First, all elements in Column 1 exceeded Cohen’s (1960) suggested value of .80, implying adequate reliability. Second, the values in Column 2 also exceeded Perreault and Leigh’s recommendation of .80. Third, the scores in Column 3 are all above .90, far exceeding Kassarjian’s (1977) minimum values. In sum, the coding scheme is reliable because of the high degree of inter-coder and intra-coder agreement and the few disagreements among the coders, which were resolved through discussion among the coders, following Kassarjian (1977).

Table 6 provides evidence on the frequency of the feedback comments being classified into each category:

Table 6. Descriptive Statistics of Feedback Text Comments

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Outstanding Benevolence</th>
<th>Abysmal Benevolence</th>
<th>Outstanding Credibility</th>
<th>Abysmal Credibility</th>
<th>Ordinary Positive Ratings</th>
<th>Negative Ratings</th>
<th>Neutral Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback</td>
<td>7.25%</td>
<td>0.34%</td>
<td>12.65%</td>
<td>1.03%</td>
<td>78.73%</td>
<td>98.55%</td>
<td>1.42%</td>
</tr>
</tbody>
</table>

It is interesting to note that virtually all (97%) of the negative ratings were classified as either abysmal benevolence or credibility. This is justifiable since negative ratings are rare (Resnick and Zeckhauser 2002), and eBay strongly encourages buyers to try to resolve problems before posting negative feedback. Therefore, buyers would only leave an abysmal feedback comment for cases of fraud, severe product misrepresentation, extreme delays, and contract default (consistent with our proposed conceptualization and operationalization as either abysmal benevolence or credibility). Of the abysmal text comments, about one quarter was classified as abysmal benevolence (or 0.34% of total), and the remaining as abysmal credibility (or 1.03% of all feedback).

On the other hand, only about 20% of the positive ratings were classified as either outstanding benevolence or credibility. Of those, one third (7.2%) was classified as outstanding benevolence, and two thirds (12.65%) as outstanding credibility. While in theory a text comment could contain evidence of both credibility and benevolence, such comments were not found in this study (perhaps due to the short length of the text).
Almost 80% of the text comments were classified as ordinary. In sum, these descriptive statistics imply that buyers mostly give abysmal comments to supplement their negative ratings, while only a modest proportion (about 20%) of the positive ratings is associated with an outstanding text comment.

Having classified all feedback text comments, they were then linked to each of the 420 sellers, which in turn were matched with the survey responses of the 420 buyers they recently transacted with these 420 sellers. **Feedback Ratings:** Positive ratings measure the number of each seller’s positive (+1) ratings, while negative ratings measure each seller’s number of negative (-1) ratings. Given the distribution of positive and negative ratings in the sample, the natural logarithm has been used to normalize each distribution (Ba and Pavlou 2002). Feedback ratings were collected for only the 420 sellers whose buyers responded to our survey.

**Price Premium (PP):** Following Ba and Pavlou (2002), a measure of price premium for each seller was calculated by subtracting the mean price (for each of the ten products under examination) from the final price of the product paid by the buyer, divided by the mean price of each product. The mean price was calculated for both the entire sample (n=1,665) and the respondents’ sample (n=420). The mean prices for each of the ten products were not statistically different between the two samples, implying that the respondents were not biased in terms of the prices they paid. The mean of the entire sample was then used in the final calculations.

**Product Price:** Product price was measured as each product’s mean price across all auctions (Ipod, $144; DVDs, $21; CDs, $8; palm pilot, $172; camera, $211; camcorder, $451; DVD player, $281 monitor, $371).

### 3.3.2 Survey Measurement Items

As described in Section 3.1 (Study Setting), a measurement instrument was developed and distributed to the buyers who had recently purchased a product from the selected sellers. The buyers were asked to respond to their trust beliefs in regards to the specific seller’s benevolence and credibility. Wherever possible, measurement items were based on existing scales, as shown in Appendix 1. The preliminary instrument was pilot tested for appropriateness and clearness with 12 frequent eBay buyers. All survey items were measured on Likert-type scales anchored at (1) = ‘strongly disagree’; (4) = ‘neutral’; and (7) = ‘strongly agree’.
**Benevolence:** The buyer’s benevolence beliefs in a seller were measured using a five-item scale adapted from Gefen (2002) and Pavlou (2002). The reliability of the benevolence scale was 0.90.\(^{14}\)

**Credibility:** The buyer’s credibility beliefs in a seller were measured using a five-item scale adapted from Ba and Pavlou (2002) and Gefen (2002). The reliability of the credibility scale was 0.93.

**Trust Propensity:** This construct was measured based on Gefen (2000). The scale’s reliability was 0.94.

**Past Experience with Seller:** A binary survey item asked buyers whether they had previously transacted with the seller they recently purchased the product from, following Pavlou and Gefen (2004). Only 31 buyers (7%) reported having bought from the same seller in the past, confirming Resnick and Zeckhauser’s (2002) findings.

**Past Experience with Marketplace (Past Transactions):** The number of past transactions was objectively collected from eBay's auctions with secondary data that reported the number of each buyer's past transactions.

### 4. RESULTS

The data analysis method used is the Partial Least Square (PLS), which is best suited for explaining complex relationships by placing minimal demands on sample size and residual distributions (Chin et al. 2003).

#### 4.1 Measurement Model

Table 7 reports the correlation matrix, the AVEs, and the descriptive statistics of the principal constructs:

<table>
<thead>
<tr>
<th></th>
<th>Mean (STD)</th>
<th>PP</th>
<th>BEN</th>
<th>CRED</th>
<th>O-B</th>
<th>A-B</th>
<th>O-C</th>
<th>A-C</th>
<th>ORD</th>
<th>(+)</th>
<th>(-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Premiums (PP)</td>
<td>0.0 (.66)</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benevolence (BENEV)</td>
<td>4.8 (2.3)</td>
<td></td>
<td>.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credibility (CRED)</td>
<td>5.2 (2.0)</td>
<td></td>
<td></td>
<td>.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outstanding Benevolence (O-B)</td>
<td>1.7 (1.4)</td>
<td></td>
<td></td>
<td></td>
<td>.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abysmal Benevolence (A-B)</td>
<td>0.1 (0.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outstanding Credibility (O-C)</td>
<td>3.1 (2.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abysmal Credibility (A-C)</td>
<td>0.3 (0.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordinary Comments (ORD)</td>
<td>19.8 (4.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.96</td>
<td>.77</td>
<td>-.14</td>
</tr>
<tr>
<td>Positive Ratings (+)</td>
<td>7.2 (9.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Negative Ratings (-)</td>
<td>2.1 (1.1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
</tbody>
</table>

AVE values are shown in the matrix diagonal; ** Significant at p<.01 level; * Significant at p<.05 level

In addition to validating reliability (as described in Section 3), the measurement model was assessed in terms of convergent and discriminant validity, which is inferred when (a) the square root of each construct’s is larger than its correlations with other constructs (i.e. the AVE shared between the construct and its indicators is larger than the AVE shared between the construct and other constructs) and (b) the PLS indicators load much higher on their hypothesized factor than on other factors (own-loadings are higher than cross-loadings).

---

\(^{14}\) Reliability is measured with the internal consistency coefficient of Partial Least Squares (PLS) given by \(\left(\sum \lambda_i^2 / \left[\sum \lambda_i^2 + \Sigma \text{Var}(\varepsilon)\right]\right)\), where: \(\lambda_i\) is the component loading to an indicator and \(\text{Var}(\varepsilon) = 1-\lambda_i^2\).
First, as shown in Table 7, the square roots of the AVE were all above .80, which is larger than all other cross-correlations, indicating that the variance explained by the respective construct is much larger than the measurement error variance. Second, a Confirmatory Factory Analysis (CFA) was conducted in PLS, following Agarwal and Karahanna (2000). As shown in Appendix 2, all constructs load on their respective items much higher than on any other items. These two tests jointly render evidence of convergent and discriminant validity.

Common method bias was assessed with several tests (Podsakoff et al. 2003): First, it was assessed with Harman’s one-factor test, in which the principal components factor analysis showed that each of the constructs explains roughly equal variance (Appendix 2), inferring that the data do not suffer from common method bias. Second, a partial correlation method was employed (Podsakoff and Organ 1986), in which the first factor from the factor analysis was entered into the PLS structural model as a control variable on all dependent variables. This factor is assumed to “contain the best approximation of the common method variance if it is a general factor on which all variables load” (p. 536). This factor did not produce a significant change in the variance explained in any dependent variable. Third, the study’s dependent variable (price premiums) and the feedback ratings and feedback text comments are captured with secondary data that are distinct from the primary survey data (e.g., trust beliefs). In sum, these tests suggest that common method bias does not seem to be a problem in this study.

4.2 Structural Models and Hypotheses Testing

The structural model was tested with PLS (Figure 2). Only significant relationships and control effects are shown for clarity. To account for heteroskedasticity and error in variance, all variables were standardized. Multicollinearity among the independent variables is not a serious concern since all relevant checks (eigenanalysis, tolerance values, and VIF) did not suggest any evidence of multicollinearity.

The two control interaction effects (product price X benevolence and product price X credibility) were computed following Chin et al. (2003) by cross-multiplying the standardized items of each construct.

As Figure 2 shows, buyer’s trust in the seller’s benevolence (b=.40, p<.01) and credibility (b=.32, p<.01) have a significant impact on price premium, controlling for the direct impact of auction bids, the moderating role of product price ($\Delta R^2=.05$ for benevolence; $\Delta R^2=.04$ for credibility), and the insignificant role of feedback ratings and past experience with the seller and the marketplace. These findings validate H1 and H2, respectively.

---

15 Since PLS provides the loadings for the construct’s own indicators, the cross-loadings were obtained by calculating a factor score for each factor based on the weighted sum of each construct’s indicators (using the PLS weights of the measurement model). The factor scores were then correlated with all other indicators to calculate cross loadings of other indicators on each construct.
In terms of predicting a buyer’s trust in the seller’s benevolence, outstanding benevolence (b=.34, p<.01) and abysmal benevolence (b=-.41, p<.01) comments are significant antecedents, even after controlling for the significant control effects of trust propensity and past experience with the seller, thus validating H3a and H3b.

In terms of the antecedents of credibility, outstanding (b=.24, p<.01) and abysmal (b=-.31, p<.01) credibility comments have a significant role in a buyer’s trust in a seller’s credibility, supporting H4a and H4b. These two predictors are significant despite the significant control effects of positive and negative ratings, past experience with the marketplace, and trust propensity.

While positive and negative ratings have a significant impact on credibility, they do not have a significant impact on benevolence. Given the plain nature of feedback ratings, they cannot convey any transaction details to help buyers build benevolence, and this is perhaps why feedback ratings have only been linked to credibility. Also, the higher impact of the abysmal feedback comments compared to the outstanding feedback comments is consistent with Ba and Pavlou (2002) and Sirdeshmukh et al. (2002) who found that negative feedback is more influential than positive. This is especially true in online marketplaces where abysmal comments are rare.

Finally, the variance explained in price premium (R²=.50), benevolence (R²=.57), and credibility (R²=.59) is high, confirming the predictive validity of the proposed independent variables. Especially for price premiums, the variance explained (R²=50%) is considerably higher than prior studies (R²=20-30%) (Resnick et al. 2002), suggesting that benevolence is a key predictor of price premiums that has been alas ignored in the literature.
4.3 A Competing Model

To overcome the subjective survey assessment of benevolence and credibility by survey responses, an alternative model was tested with only the feedback ratings and comments as the predictor variables (Figure 3).

As shown in Figure 3, the feedback comments have a significant impact on price premiums. While these results confirm the predictive power of feedback comments with purely secondary data, the variance explained (R²=33%) compared to the full model (R²=50%) is significantly lower. To formally test the full mediating role of benevolence and credibility, we employed Baron and Kenny’s (1986) test for mediation (omitted for brevity). The results suggest that the impact of all four feedback text comments becomes insignificant when the two trust dimensions are included in the full model, confirming the full mediating role of benevolence and credibility.

5. DISCUSSION

5.1 Key Findings and Contributions

First, this study identifies, conceptualizes, and operationalizes the role of feedback text comments as a new trust-building means in online marketplaces. To the best of our knowledge, this is the first study to examine the nature and hidden referral value of feedback text comments. Virtually all (97%) of the study’s respondents indicated having examined the feedback text comments of the sellers before transacting with them. An important separation proposed and validated in this study is the distinct nature and role of (tacit) feedback text comments and (explicit) feedback ratings, following the knowledge management literature. Whereas the literature has focused on explicit feedback ratings, this study contributes to our better understanding of the role...
of institutional feedback technologies to build trust and predict price premiums. Most important, from a predictive standpoint, feedback text comments help explain a substantial amount of variance in benevolence and credibility (directly) and price premiums (indirectly), beyond existing variables (e.g., feedback ratings).

Second, this study introduces the construct of benevolence in impersonal online auction marketplaces. While the literature on online auctions has primarily focused on the credibility dimension of trust, the results suggest that benevolence may be an even more influential antecedent of price premiums. Most important, benevolence considerably adds to the variance explained in price premiums ($R^2=50\%$), well above the existing literature ($R^2=20-30\%$) (e.g., Ba and Pavlou 2002, Dellarocas 2003, Pavlou and Gefen 2005). More specifically, benevolence explains an additional 23% of the variance on price premiums (18% directly and 5% through its moderating effect with product price). Otherwise, the remaining variables would only explain 27% of the variance in price premiums, consistent with the existing literature. Notably, the introduction of benevolence also extends the trust literature by examining whether, how, and why benevolence is built through transference in an impersonal online context among anonymous third parties.

Third, this study delineates the exact process by which the content of feedback technologies (both feedback ratings and text comments) indirectly shapes price premiums through the full mediating role of trust, thereby enhancing the descriptive power of a model that integrates feedback information with price premiums. It also identifies benevolence as another key ‘missing’ link in the proposed model that, together with credibility, fully mediate the impact of feedback ratings and comments on price premiums.

Finally, from a methodological perspective, a key empirical contribution of this study is to undertake a large-scale content analysis to quantify the underlying meaning embedded in over 10,000 feedback comments. The painstaking content analysis uncovers instances of past outstanding and abysmal seller behavior that extend beyond what simple positive and negative ratings can convey. These tacit feedback comments explain a substantial degree of variance in benevolence and credibility compared to only positive and negative ratings. The use of publicly available data from an actual auction marketplace, not only increases the study’s realism, but it also overcomes concerns for common method bias since the study’s constructs are separately captured (i.e., content analysis for feedback comments; survey items for benevolence, credibility, and other controls; and secondary (archival) data for price premiums, positive and negative ratings, product prices, and auction bids).
5.2 Implications for Theory and Research

This study has implications for (1) the study of online auction marketplaces and price premiums, (2) the trust literature, and (3) the literature on institutional feedback technologies, as discussed in detail below:

5.2.1 Implications for Online Marketplaces and Price Premiums

In order to prevent a ‘market of lemon sellers’ (Akerlof 1970), online marketplaces must be able to differentiate among sellers and reward high-quality ones with price premiums. Therefore, any means for differentiating among sellers is of utmost importance, and identifying “hidden” antecedents of price premiums (i.e., feedback comments and benevolence) has implications for better understanding the continued survival and success of online auction marketplaces. Since virtually all buyers (97%) do pay attention to the content of feedback comments and utilize them to form their trust beliefs, feedback comments are another differentiating means that is apparently harnessed by online auction marketplaces to facilitate their survival and success.

In addition to seller differentiation, the continued existence of online marketplaces also lies in their ability to mitigate the uncertainties involved in transacting in an impersonal environment. A high level of trust in sellers is an important means for mitigating the uncertainty of online marketplaces (Pavlou and Gefen 2004, 2005). These marketplaces must thus identify all possible means to help buyers build trust in sellers (Keser 2003). Feedback comments are such antecedents of trust that have alas remained “hidden,” but they do complement existing trust-building means (positive & negative ratings) to help reduce the uncertainty of online marketplaces.

From a strategic perspective, since price premiums denote a seller’s above average returns and superior financial gains, they can also be viewed as a surrogate of a seller’s competitive advantage. By explaining a substantial portion of the variance in price premiums, this study has implications for fully understanding the various means for strategic differentiation among sellers in online marketplaces. As this study attests, much of the sellers’ strategic differentiation lies in building buyer’s trust in their benevolence and credibility, with benevolence having a slightly greater weight. Accordingly, in order to engender benevolence and credibility to command price premiums, in addition to accumulating positive ratings and avoiding negative ones, sellers do leverage their feedback text comments to describe their previous outstanding activities. More specifically, tacit feedback comments help differentiate high-quality sellers from those that end up receiving abysmal comments. This differentiation on the basis of abysmal text comments is reinforced by the fact that auction marketplaces strongly encourage buyers to leave negative feedback only as a last resort (Resnick and Zeckhauser 2002).
5.2.2 Implications for the Trust Literature

For the trust literature, the most notable finding is the existence and influential role of benevolence in anonymous and impersonal environments where buyers predominantly transact with new sellers each time (Resnick and Zeckhauser 2002). This challenges the long-held assumption that benevolence necessitates familiarity and repeated interaction (Lewicki and Bunker 1995, Sitkin and Roth 1993). Even controlling for the modest impact of the buyer’s trust propensity and past experience with the same seller, benevolence is mainly built through feedback comments given by third parties that are unrelated to the dyadic buyer-seller transaction. By conveying rich tacit information about a seller’s prior activities, institutional feedback technologies are able to form and transfer a collectively-held belief that enables buyers to build trust in a seller’s benevolence.

While both benevolence and credibility are significant predictors of price premiums, a notable finding is the stronger impact of benevolence. This can be explained in two ways: First, the trust literature argues that benevolence is the most robust and influential form of trust (Lewicki and Bunker 1995, Sitkin and Roth 1993). Second, since price premiums are a competitive goal, its predictors must be immune from low-cost imitations. Commitment to outstanding goodwill activities is more difficult to accomplish than excelling in reliably fulfilling transactions. As this study attests, outstanding credibility comments are almost twice as likely as outstanding benevolence comments. Hence, benevolence is more likely to differentiate among sellers on the basis of rarity.

In terms of the antecedents of benevolence and credibility, it is notable that positive and negative ratings have only a modest impact on credibility and an insignificant impact on benevolence. On the other hand, the major predictors of both dimensions of trust are the feedback text comments. This is because most sellers have recognized the value of accumulating positive ratings and avoiding negative ratings, and they have established such feedback profiles (Resnick and Zeckhauser 2002). Buyers are thus less likely to focus on feedback ratings in forming their trust beliefs, but they would search for differences in the sellers’ feedback text comments. Thus, feedback comments are likely to help buyers form their trust beliefs in the sellers’ benevolence and credibility.

Finally, this study contributes to the emerging literature (e.g., Kim and Benbasat 2003, Lim et al. 2001) on understanding the meaning and effectiveness of trust-building text arguments. While this literature has focused on arguments created by commercial entities that are intentionally aimed at building trust, this study shows that trust can also be built based on text comments left by neutral parties whose goal is not to build trust. While commercial arguments are better-designed, third-party arguments are persuasive due to their impartiality.
5.2.3 Implications for Institutional Feedback Technologies

The scope and importance of WOM communication and institutional feedback technologies have dramatically increased with the advent of the Internet. Reichheld (2003) notably showed that buyer propensity to recommend products and services to others (termed referral value) is a more influential predictor of firm performance than traditional success measures, such as buyer satisfaction. Since an inseparable component of WOM communication and feedback are text comments by which buyers recommend sellers to other buyers, text comments have a significant referral value (in the form of reputation for trustworthiness) by which sellers can improve their performance (through price premiums). In addition to trustworthiness, future research could explore other means by which feedback text comments can provide referral value and influence performance.

Despite the distinction between feedback ratings and comments (following the knowledge management literature), it is important to clarify that these two types of knowledge - tacit and explicit - are not dichotomous, but they are dependent, inseparable, and mutually-reinforcing. Since new knowledge is often created through interactions among various combinations of tacit and explicit knowledge (Alavi and Leinder 2001), both feedback ratings and text comments are necessary (as this study also attests) to provide buyers with the most relevant information to shape their trust beliefs and guide their price premiums.

By showing that feedback technologies can convey tacit knowledge in the form of feedback comments that is distinct from feedback ratings, this study suggests their enhanced scope and utility. The results of this study can thus explain some contradictory evidence for the role of feedback in price premiums. For example, Kauffman and Wood (2000) report that feedback ratings generate price discounts in online auctions for coins. However, the authors did not investigate feedback comments, which might have explained this contradiction. In the market for rare coins where information asymmetry is enormous because of coin authenticity concerns, feedback text comments may be the primary source of information about a seller’s benevolence and credibility.

5.3 Implications for Practice

While the marketing literature has long recognized the importance of ‘going beyond what is necessary’, the positive effect of such outstanding practices could not be easily communicated to other buyers. In contrast, feedback technologies allow sellers to reach millions of buyers with minimal cost. Since feedback technologies facilitate a large-scale WOM communication, sellers should further attempt to shape WOM communication to their advantage by encouraging their past buyers to comment upon their favorable experiences with them.
Second, since feedback text comments have an impact on auction prices, sellers must strive to entice favorable comments to build a reputation for benevolence and credibility. For example, the comments shown in Tables 4a and 4c serve as prominent examples. Likewise, sellers should avoid receiving abysmal comments as those identified in Tables 4b and 4d. In general, sellers need to carefully manage their buyer relationships to encourage buyers to leave them outstanding feedback comments that signal their benevolence and credibility.

Finally, this study suggests that credibility and benevolence become more influential on price premiums for more expensive products. This suggests that sellers of high-priced goods must invest even more on building their reputation for credibility and benevolence by encouraging their buyers to report their outstanding practices.

5.4 Limitations & Suggestions for Future Work

This study has some limitations, which create interesting opportunities for future research:

First, despite the relatively objective assessment of feedback text comments with content analysis, it is important to note that feedback comments are subject to each buyer’s personal assessment in terms of forming their beliefs and determining their ultimate price premiums. This is perhaps why the each buyer’s self-assessed credibility and benevolence beliefs fully mediate the objective analysis of feedback comments and ratings. Future research could examine how buyers assess feedback text comments, how they form different patterns in feedback text comments, and how they weigh outstanding and abysmal benevolence and credibility comments.

Second, despite the valuable information that feedback text comments convey, their tacit nature imposes a cost to buyers in terms of the time and effort to read, cognitively evaluate, and integrate these text comments. Similarly, there is a cost to buyers that write these feedback text comments. Future research could examine the trade-off between the cost of utilizing feedback text comments and the informational value they provide.

Third, in addition to specifying four different categories of feedback text comments, almost 80% of these comments were classified as ordinary. Other factors could be hidden in these seemingly ordinary comments that could be relevant for online marketplaces. Future research could potentially uncover other factors beyond outstanding and abysmal benevolence and credibility comments that could better predict price premiums.

Fourth, since feedback ratings and comments are voluntary, just over half of eBay buyers leave feedback (Steiner 2003). Therefore, since not all seller activities are documented, feedback text comments (similar to feedback ratings) may reflect evidence from extremely pleased or disgruntled buyers. Nevertheless, this does
not raise any concerns about a systematic bias in either direction. What this study analyzes is the feedback text comments that the buyer views, even if they only reflect a truncated sample of all seller’s past transactions. However, future research could attempt to capture feedback comments and ratings from the remaining buyers and examine whether this creates any significant differences.

Fifth, the cost of accumulating outstanding feedback comments has not been explicitly examined. There is a trade-off between gaining a price premium by having a reputation for benevolence and credibility versus the cost of needed to obtain such positive feedback comments. There are two potential answers to this trade-off: First, sellers may choose a niche by incurring a cost to fully satisfy buyers in return to future benefits from a superior reputation of benevolence and/or credibility. Alternatively, sellers could differentiate between price sensitive buyers and those sensitive to uncertainty reduction and service quality. Assuming enough knowledge of the buyer population, future research could obtain the optimum level of a benevolence and credibility ratio that maximizes price premiums over time while minimizing their cost for different types of buyers.

Finally, despite the trust-building potential of feedback text comments, it is apparently difficult for buyers to assess the meaning of numerous text comments (compared to ratings that can be concisely summarized). Even if virtually all buyers do spend time going over sellers’ feedback text comments before transacting with them, there is obviously some effort that may impede buyers from examining and transacting with many sellers, thus reducing the availability of sellers and the degree of competitiveness in the marketplace. Similar to our content analysis that succinctly extracted the content of feedback text comments, future research may build an automated standardized method to undertake an efficient content analysis of text comments. Data mining techniques could help future research to quickly and accurately extract the content of feedback text comments (Shaw, Subramanian, Tan, and Welge 2001).

6. CONCLUSION

The analysis of feedback text comments is an important complement to the growing line of research on fully understanding the nature and role of institutional feedback technologies in online auction marketplaces. By uncovering the ‘hidden’ referral value of feedback text comments and the mediating role of benevolence, this study better predicts how buyers reward trustworthy sellers with price premiums, thus shedding light on the existence and success of online marketplaces that depend on seller differentiation and uncertainty reduction.
REFERENCES


Appendix 1. Survey Measurement Items

Buyer's Trust in Seller's Benevolence (Gefen 2002; Pavlou 2002)
1. This seller is likely to care for my welfare.
2. If there is a problem with my transaction, this seller will go out on a limb for me.
3. This seller is likely to make sacrifices for me if needed.
4. This seller is unlikely to act opportunistically, even given the chance.
5. This seller is likely to keep my best interests in mind.

Buyer's Trust in Seller's Credibility (Ba and Pavlou 2002; Gefen 2002)
1. I believe this seller will deliver to me a product that matches the posted description.
2. I believe this seller will deliver to me a product according to the posted delivery terms and conditions.
3. This seller is likely to be honest.
4. This seller is likely to be reliable.
5. This seller is likely to be credible.

Buyer's Trust Propensity (Gefen et al. 2003)
1. I usually trust sellers unless they give me a reason not to trust them.
2. I generally give sellers the benefit of the doubt.
3. My typical approach is to trust sellers until they prove I should not trust them.

Buyer's Past Experience with Seller (Pavlou and Gefen 2004)
Prior to the last transaction, did you transact with this seller in the past? (Yes/No)

Number of Feedback Comments Examined
Prior to bidding at this seller's auction, how many feedback comments have you examined? [none; 25(1 page); 50(2 pages); more than 50]

Appendix 2. PLS Confirmatory Factor Analysis for the study's Principal Constructs

<table>
<thead>
<tr>
<th></th>
<th>P-P</th>
<th>BEN</th>
<th>CRED</th>
<th>O-BEN</th>
<th>A-BEN</th>
<th>O-CRED</th>
<th>A-CRED</th>
<th>ORD</th>
<th>T-P</th>
<th>PE(S)</th>
<th>PE(M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Premiums</td>
<td>1.0</td>
<td>.41</td>
<td>.36</td>
<td>.31</td>
<td>-.32</td>
<td>.26</td>
<td>-.25</td>
<td>.20</td>
<td>.21</td>
<td>.28</td>
<td>.23</td>
</tr>
<tr>
<td>Benevolence1</td>
<td>.48</td>
<td>.90</td>
<td>.46</td>
<td>.51</td>
<td>-.55</td>
<td>.40</td>
<td>-.33</td>
<td>.12</td>
<td>.24</td>
<td>.33</td>
<td>.27</td>
</tr>
<tr>
<td>Benevolence2</td>
<td>.43</td>
<td>.87</td>
<td>.43</td>
<td>.51</td>
<td>-.59</td>
<td>.42</td>
<td>-.34</td>
<td>.13</td>
<td>.30</td>
<td>.29</td>
<td>.26</td>
</tr>
<tr>
<td>Benevolence3</td>
<td>.45</td>
<td>.91</td>
<td>.49</td>
<td>.48</td>
<td>-.60</td>
<td>.39</td>
<td>-.40</td>
<td>.17</td>
<td>.24</td>
<td>.37</td>
<td>.30</td>
</tr>
<tr>
<td>Benevolence4</td>
<td>.41</td>
<td>.88</td>
<td>.42</td>
<td>.53</td>
<td>-.61</td>
<td>.35</td>
<td>-.41</td>
<td>.19</td>
<td>.29</td>
<td>.33</td>
<td>.29</td>
</tr>
<tr>
<td>Benevolence5</td>
<td>.47</td>
<td>.89</td>
<td>.45</td>
<td>.46</td>
<td>-.62</td>
<td>.34</td>
<td>-.51</td>
<td>.16</td>
<td>.25</td>
<td>.35</td>
<td>.27</td>
</tr>
<tr>
<td>Credibility1</td>
<td>.38</td>
<td>.46</td>
<td>.94</td>
<td>.29</td>
<td>-.30</td>
<td>.44</td>
<td>-.48</td>
<td>.19</td>
<td>.25</td>
<td>.30</td>
<td>.31</td>
</tr>
<tr>
<td>Credibility2</td>
<td>.34</td>
<td>.43</td>
<td>.93</td>
<td>.26</td>
<td>-.26</td>
<td>.47</td>
<td>-.50</td>
<td>.23</td>
<td>.20</td>
<td>.32</td>
<td>.35</td>
</tr>
<tr>
<td>Credibility3</td>
<td>.40</td>
<td>.47</td>
<td>.90</td>
<td>.29</td>
<td>-.25</td>
<td>.48</td>
<td>-.46</td>
<td>.25</td>
<td>.28</td>
<td>.30</td>
<td>.38</td>
</tr>
<tr>
<td>Credibility4</td>
<td>.39</td>
<td>.51</td>
<td>.91</td>
<td>.32</td>
<td>-.34</td>
<td>.43</td>
<td>-.49</td>
<td>.26</td>
<td>.24</td>
<td>.29</td>
<td>.40</td>
</tr>
<tr>
<td>Credibility5</td>
<td>.36</td>
<td>.47</td>
<td>.90</td>
<td>.28</td>
<td>-.25</td>
<td>.49</td>
<td>-.45</td>
<td>.22</td>
<td>.30</td>
<td>.33</td>
<td>.36</td>
</tr>
<tr>
<td>Outstanding Benevolence1</td>
<td>.29</td>
<td>.49</td>
<td>.41</td>
<td>.85</td>
<td>-.18</td>
<td>.35</td>
<td>-.04</td>
<td>.25</td>
<td>.10</td>
<td>.09</td>
<td>.09</td>
</tr>
<tr>
<td>Outstanding Benevolence2</td>
<td>.31</td>
<td>.52</td>
<td>.30</td>
<td>.81</td>
<td>-.13</td>
<td>.33</td>
<td>-.05</td>
<td>.21</td>
<td>.07</td>
<td>.03</td>
<td>.11</td>
</tr>
<tr>
<td>Outstanding Benevolence3</td>
<td>.37</td>
<td>.50</td>
<td>.39</td>
<td>.86</td>
<td>-.10</td>
<td>.40</td>
<td>-.06</td>
<td>.23</td>
<td>.08</td>
<td>.06</td>
<td>.08</td>
</tr>
<tr>
<td>Abysmal Benevolence1</td>
<td>.33</td>
<td>.57</td>
<td>.45</td>
<td>-.26</td>
<td>.80</td>
<td>-.09</td>
<td>.45</td>
<td>-.04</td>
<td>.05</td>
<td>.09</td>
<td>.03</td>
</tr>
<tr>
<td>Abysmal Benevolence2</td>
<td>.29</td>
<td>.58</td>
<td>.28</td>
<td>-.30</td>
<td>.81</td>
<td>-.05</td>
<td>.46</td>
<td>-.05</td>
<td>.08</td>
<td>.00</td>
<td>.06</td>
</tr>
<tr>
<td>Abysmal Benevolence3</td>
<td>.28</td>
<td>.53</td>
<td>.40</td>
<td>-.25</td>
<td>.86</td>
<td>-.08</td>
<td>.43</td>
<td>-.04</td>
<td>.05</td>
<td>.02</td>
<td>.03</td>
</tr>
<tr>
<td>Outstanding Credibility1</td>
<td>.28</td>
<td>.43</td>
<td>.25</td>
<td>.44</td>
<td>-.09</td>
<td>.86</td>
<td>-.20</td>
<td>.05</td>
<td>.04</td>
<td>.04</td>
<td>.06</td>
</tr>
<tr>
<td>Outstanding Credibility2</td>
<td>.29</td>
<td>.35</td>
<td>.29</td>
<td>.34</td>
<td>-.03</td>
<td>.88</td>
<td>-.16</td>
<td>.09</td>
<td>.09</td>
<td>.01</td>
<td>.10</td>
</tr>
<tr>
<td>Outstanding Credibility3</td>
<td>.22</td>
<td>.40</td>
<td>.33</td>
<td>.36</td>
<td>-.07</td>
<td>.83</td>
<td>-.18</td>
<td>.06</td>
<td>.07</td>
<td>.06</td>
<td>.11</td>
</tr>
<tr>
<td>Abysmal Credibility1</td>
<td>.26</td>
<td>.42</td>
<td>.36</td>
<td>.09</td>
<td>.38</td>
<td>-.21</td>
<td>.89</td>
<td>-.08</td>
<td>.01</td>
<td>.02</td>
<td>-.01</td>
</tr>
<tr>
<td>Abysmal Credibility2</td>
<td>.29</td>
<td>.39</td>
<td>.42</td>
<td>.15</td>
<td>.45</td>
<td>-.18</td>
<td>.90</td>
<td>-.07</td>
<td>.04</td>
<td>.01</td>
<td>.04</td>
</tr>
<tr>
<td>Abysmal Credibility3</td>
<td>.23</td>
<td>.37</td>
<td>.45</td>
<td>.13</td>
<td>.43</td>
<td>-.19</td>
<td>.82</td>
<td>-.04</td>
<td>.02</td>
<td>.07</td>
<td>.06</td>
</tr>
<tr>
<td>Ordinary Comments1</td>
<td>.21</td>
<td>.18</td>
<td>.28</td>
<td>.21</td>
<td>-.09</td>
<td>.10</td>
<td>-.06</td>
<td>.95</td>
<td>-.08</td>
<td>.09</td>
<td>.01</td>
</tr>
<tr>
<td>Ordinary Comments2</td>
<td>.15</td>
<td>.13</td>
<td>.40</td>
<td>.25</td>
<td>-.03</td>
<td>.16</td>
<td>-.03</td>
<td>.93</td>
<td>.04</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Ordinary Comments3</td>
<td>.18</td>
<td>.13</td>
<td>.25</td>
<td>.18</td>
<td>-.02</td>
<td>.05</td>
<td>-.08</td>
<td>.91</td>
<td>.07</td>
<td>.03</td>
<td>.02</td>
</tr>
<tr>
<td>Trust Propensity1</td>
<td>.19</td>
<td>.25</td>
<td>.29</td>
<td>.11</td>
<td>.10</td>
<td>.05</td>
<td>-.06</td>
<td>.01</td>
<td>.95</td>
<td>.24</td>
<td>.30</td>
</tr>
<tr>
<td>Trust Propensity2</td>
<td>.18</td>
<td>.30</td>
<td>.33</td>
<td>.10</td>
<td>-.06</td>
<td>.09</td>
<td>.04</td>
<td>.06</td>
<td>.93</td>
<td>.26</td>
<td>.33</td>
</tr>
<tr>
<td>Trust Propensity3</td>
<td>.16</td>
<td>.32</td>
<td>.36</td>
<td>.09</td>
<td>-.04</td>
<td>.10</td>
<td>-.03</td>
<td>.08</td>
<td>.91</td>
<td>.30</td>
<td>.35</td>
</tr>
<tr>
<td>Past Experience (Seller)</td>
<td>.29</td>
<td>.34</td>
<td>.32</td>
<td>.06</td>
<td>.03</td>
<td>.03</td>
<td>-.01</td>
<td>.07</td>
<td>.25</td>
<td>1.0</td>
<td>.48</td>
</tr>
<tr>
<td>Past Experience (Marketplace)</td>
<td>.19</td>
<td>.24</td>
<td>.38</td>
<td>.10</td>
<td>-.08</td>
<td>.01</td>
<td>.04</td>
<td>.04</td>
<td>.33</td>
<td>.44</td>
<td>1.0</td>
</tr>
<tr>
<td>Variance Explained (%)</td>
<td>8.0</td>
<td>10.3</td>
<td>9.8</td>
<td>7.2</td>
<td>6.2</td>
<td>6.8</td>
<td>7.0</td>
<td>9.2</td>
<td>7.7</td>
<td>6.0</td>
<td>5.1</td>
</tr>
</tbody>
</table>