

## The Value of Reputation Systems in Business Contexts – A Qualitative Study Taking the View of Buyers

Simon Hemmrich  
Paderborn University  
[simon.hemmrich@upb.de](mailto:simon.hemmrich@upb.de)

Jannika Marie Schäfer  
Paderborn University  
[jannikas@mail.uni-paderborn.de](mailto:jannikas@mail.uni-paderborn.de)

Philipp Hansmeier  
Paderborn University  
[philipp.hansmeier@upb.de](mailto:philipp.hansmeier@upb.de)

Daniel Beverungen  
Paderborn University  
[daniel.beverungen@upb.de](mailto:daniel.beverungen@upb.de)  
e

### Abstract

*Reputation systems for companies to rate each other's performance are largely unexplored in research and hardly available in practice. However, these systems are relevant for prospective buyers to find a trustworthy seller. This observation applies especially to short-lived business relationships where fulfilling the performance promise is subject to a high degree of uncertainty. This paper explores the value of a reputation system for a business-to-business (B2B) context and focuses on three novel solutions for designing reputation systems. These solutions include selling ratings, conducting ratings as payments, and employing a counter-rating mechanism. We interview buyers to fathom the added value of these solutions in different contexts. Our findings suggest that such a system is useful for companies acting in less transparent markets and also helps when companies already have a good market overview. Depending on the market conditions and business context, the perceived value of the proposed system varies.*

**Keywords:** Reputation system, business-to-business, value for buyers, qualitative research

### 1. Introduction

Business companies lack a solid information system to select capable sellers or signal high capabilities. Therefore, business reputation systems will become highly relevant as an overarching decision support system for companies in the B2B context as soon as they allow buyers to make more informed buying decisions and enable sellers to profile with high quality.

In business-to-consumer (B2C) contexts like Amazon.com, these systems provide interested parties with information about others' experiences with products and services. Transferring reputation systems into B2B contexts can, amongst others, provide similar benefits, like increasing sales rates or improving product quality assessment (Ba & Pavlou, 2002).

Despite their assumed importance for businesses, very little theoretical work exists on designing reputation systems for business contexts (Dikow et al., 2015; Gutt et al., 2019). This gap also fits the observation of a 'digital marketing capability gap' in the industrial context (Herhausen et al., 2020), which these systems can fill when they work properly (Sampath et al., 2006; Steward et al., 2018). Reputation systems might have *value* for buying decisions in the B2B context and may fundamentally transform business operations (e.g., marketing and supplier selection). These information systems can potentially withdraw *information asymmetry* between business companies (Cai & Zhu, 2016; Thierer et al., 2016).

However, transferring such systems into B2B scenarios is difficult since current systems applied in B2C scenarios are still subject to various challenges (Jøsang & Goldbeck, 2009). Remarkably, there is a lack of incentives for participants to submit ratings; they are often biased with unfair ratings, while fake ratings remain a huge issue (Ansari & Gupta, 2021; Dellarocas, 2003; Fradkin et al., 2018; He et al., 2022; Neumann & Gutt, 2019a; Resnick & Zeckhauser, 2002). On top of that, B2B environments are even more complex, showing various peculiarities (Chen et al., 2022; Dellarocas, 2003; Zhu, 2002). Existing literature has not yet found adequate incentives for business parties to submit and share fair, unbiased, and honest ratings (Cai & Zhu, 2016; Möhlmann et al., 2019; Pereira et al., 2019; Ryan, 2017).

Aiming to encounter these issues, we inspect the value of an initial advance to transfer reputation systems to business contexts as proposed by (Hemmrich, 2023; Hemmrich et al., 2023), building mainly on three novel solutions. First, a buyer can decide to sell a rating before sharing it. With this incentive, buyers are expected to be more interested in providing fair and honest ratings in non-competitive environments by increasing the profit of selling ratings. Second, buyers utilize payments as ratings, imbuing the rating with an inherent weight. Third, the

system applies a counter-rating mechanism to prevent system exploitation of dishonest or unfair buyers.

In our qualitative study, we explore the value of the proposed system in varying business contexts through in-depth interviews with buyers in the role of business owners and employees. By collecting and analyzing their experiences and opinions, we gain general knowledge of how buyers assess the value of these solutions to design and build business reputation systems. Our research question is: "*How do buyers in B2B contexts assess the value of reputation systems based on the proposed ideas?*" By qualitatively exploring this issue, we aim to provide a first understanding of the complex design requirements for business reputation systems'.

Our findings indicate that our examined solutions to design reputation systems offer value (total perceived value) in different business contexts, especially for small-sized buying companies in less transparent markets. It may also help larger companies in some cases, even though it seems to strongly depend on factors like the industry sector, market size, and the buying process. To this end, we contribute hypotheses about the main criteria and dimensions buyers apply when judging the system's value to prepare the ground for further empirical work.

This paper unfolds as follows. Section 2 presents the theoretical background and explains the proposed solutions. Section 3 describes the research method, followed by Section 4, which displays our study's results. Section 5 discusses the perceived costs and benefits, while section 6 concludes the paper.

## **2. Theoretical Background**

### **2.1. Information Asymmetries in the Buying Process**

Information asymmetries exist in business transactions when a buyer does not obtain enough information about the quality delivered by a seller, while the seller knows its quality (Akerlof, 1970). In such cases, buyers have limited capabilities to assess the quality ex-ante of the transaction and are exposed to the risk of being dissatisfied. Information asymmetries in decision-making-related business transactions cause buyers to be subject to the risk that sellers do not deliver a product as expected. This problem exists especially in short-term online transactions, where low-quality sellers have a low risk of being detected for providing bad quality (Sullivan & Kim, 2018). To avoid inefficiencies and high agency costs for controlling an agent caused by information asymmetries, establishing a reputation and, thus, trust with reputation systems are proven

measures to mitigate information asymmetries (Jøsang, 2007; Thierer et al., 2016).

While trust can be understood as one's positive expectation of another individual's actions (Williamson, 1993), reputation refers to the positive experiences of others towards an entity (Bromley, 2001). Evaluating reputation and trust with the definition of value for buyers as applied here, the value of these constructs lies primarily in reducing information asymmetry to make better buying decisions (Dimoka et al., 2012). By collecting, distributing, and aggregating feedback in the form of ratings, reputation systems provide relatively objectified measures for determining the capabilities of unknown parties (Resnick & Zeckhauser, 2002). Buyers can assess the trustworthiness of sellers and forward their experiences to other buyers. Still, current reputation systems remain ineffective in solving the adverse selection problem, so poor-quality sellers prevail in many markets (Bolton et al., 2004; Ghose, 2009; Hemmrich et al., 2023; Thierer et al., 2016).

### **2.2. Value as Construct in the Decision-Making Process of Buying**

Value is a multilevel construct, and various definitions exist. We follow an economic interpretation as an "overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml, 1988, p. 14). This understanding of the study's central construct to assess the system is supplemented by Dodds et al. (1991) theoretical classification of a total perceived value (TPV). It is the outcome of a subjective assessment in which the perceived benefits (PB) are compared against perceived costs (PC). Taken together, perceived value refers to a subjective cost-benefit analysis. When PB outweighs PC, TPV is positive, and the proposed reputation system is worth using from an interviewee's perspective.

Reputation systems are applied in various contexts to incentivize desired behavior. Their primary benefit is helping reduce risk and associated uncertainty when interacting with strangers (Dimoka et al., 2012). Reducing risk is particularly important in non-transparent online marketplaces, where buyers have little information about sellers, e.g., when they are located in different countries (Zhu, 2002). Information about past sales lets a buyer expect the seller's future quality, decreasing buying uncertainty. Buyers are more likely to engage in a business deal if they believe sellers to continue to deliver a certain quality (Moreno & Terwiesch, 2014). Vice versa, buyers refrain from engaging with sellers, who are expected to provide insufficient quality.

Critical determinants of perceived costs are the effort required to use a reputation system and the perceived reliability of the system (Wan & Nakayama, 2014). If buyers expect submitting and retrieving ratings to take significant time and resources, they may be less likely to use the system (Neumann & Gutt, 2019b; Nosko & Tadelis, 2015). Equally, when buyers feel the reputation system is unreliable and provides inaccurate or misleading information, they are less likely to use it (Dimoka et al., 2012; Rice, 2012).

### 2.3. Proposed Solutions

The three proposed solutions are part of a venture to tackle current issues to transfer reputation systems in the business context (Hemmrich et al., 2023). When a buyer provides a positive rating and sells it to a prospective buyer, it increases the seller's reputation, thereby decreasing a buyer's uncertainty about engaging with this seller (Figure 1).

**Monetary ratings:** Buyers use monetary-based ratings to confer ratings an inherent weight and make them quantifiable. Therefore, a business transaction is divided into two parts. One part is considered the basic payment, while the second part manifests the actual rating (payment as rating). A monetary payment counteracts the inflationary issuance of positive ratings since ratings cost the rating buyers money, and identities can be selected individually, respective to their estimated trustworthiness (Forman et al., 2008). When the business transaction relates to a particular identity, one can check only submitted ratings from this identity (Hemmrich, 2023; Pornpitakpan, 2004).

**Incentives to submit ratings:** Buyers can sell ratings to interested parties, e.g., other buyers or information markets. Hence, a buyer who sells a rating is directly incentivized to submit a rating. The intention to sell further ratings to (the same) buyers adds a sustainable incentive to rate honestly. Taking the game-theoretical assumption of an infinite game in non-competitive environments, a rating buyer aims to provide honest ratings to hold his reputation

accountable to sell more ratings in the future (Chen et al., 2022). Hence, this solution should contribute to solving the problem that an incentive to submit ratings is set directly from the seller's side, biasing ratings (Neumann & Gutt, 2019a). Instead, a potential buyer pays other current buyers for rating information and thus provides an incentive to generate ratings (Hemmrich et al., 2023).

**Rating fairness:** Sellers consent to be rated to prevent unauthorized buyers from submitting ratings. Also, the seller can react and counter-rate a buyer's rating when the seller receives a bad rating. Thus, a seller can submit a counter-rating (e.g., text rating) on how he feels a received bad rating is justified. The counter-ratings will become observable once a buyer's ratio between good and bad ratings exceeds a certain threshold (Ismail et al., 2003). Sellers can check this threshold to avoid exploitative buyers. Still, a buyer can now and then rate negatively without being detected by sellers, staying beneath a certain threshold. It can be expected that rational buyers will opt to a) stay beneath the threshold to stay in the game and be allowed to rate a seller reflecting a trust signal from this seller and b) try to generate more ratings and rate honestly in non-competitive environments to increase profits from sold ratings. On the other hand, a buyer's free-shot opportunity (rate negatively) is expected to make ratings more (risky and thus) meaningful and remedy the problem of reputation inflation (only favorable ratings) (Filippas et al., 2018). The seller's risk of being negatively rated underscores the value of a reputation and confirms potential buyers' trust that the system is unbiased (Hemmrich, 2023; Kreps & Wilson, 1982; Luhmann, 2017).

Reputation data can be used as a database to compare and evaluate ratings from diverse buyers. Sold ratings can be tested, compared among one another, and might be rated themselves (e.g., thumbs up or down). After having a profound data basis and network effects set in, it can be expected to be relatively easy to identify malicious raters (Forman et al., 2008; Lappas et al., 2016).

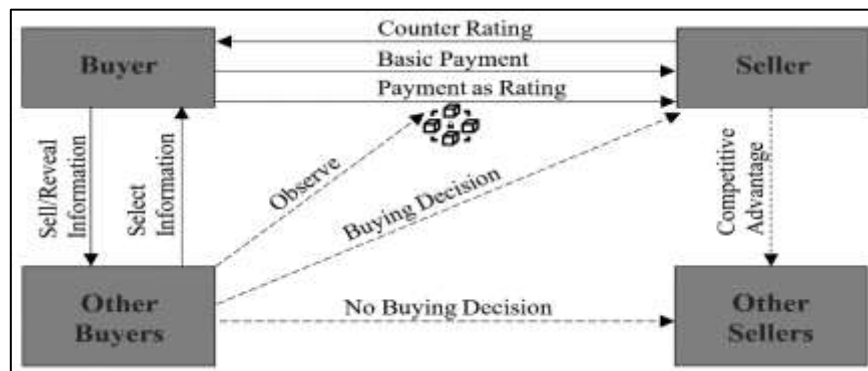


Figure 1. Mechanisms of the proposed reputation system (adopted from Hemmrich et al., 2023)

### 3. Research Method

It is unclear in which scenarios reputation systems are valuable. Therefore, it is vital to capture first under which circumstances this information system would be of value before commencing with its implementation (Sonneberg & vom Brocke, 2012).

We adopt an empirical and explorative approach with different industry sectors and company sizes to address the proposed research question. This approach will help to generate theoretical and conceptual assumptions. Qualitative research enables to develop in-depth understanding of the particular phenomenon of B2B reputation systems. Concretely, it covers eight one-person interviews concerning B2B reputation systems in our study design. The interviewees have varying industrial backgrounds and are recruited through personal contact. As the interviews are collected during June 2022, this data can be classified as cross-sectional (Döring & Bortz, 2016). Furthermore, we follow a purposive sampling approach in the natural habit of the interviewees (Marshall, 1996), who must be procurement experts (Table 1).

**Table 1. Overview of the surveyed companies**

Company	Industry sector	Company size
Company A	Wholesale	Very large
Company B	Chemistry	Large
Company C	Food Production	Large
Company D	Electric manufacturer	Medium
Company E	Health	Medium
Company F	Food Retail	Small
Company G	Construction	Small
Company H	Nutritional supplements	Small

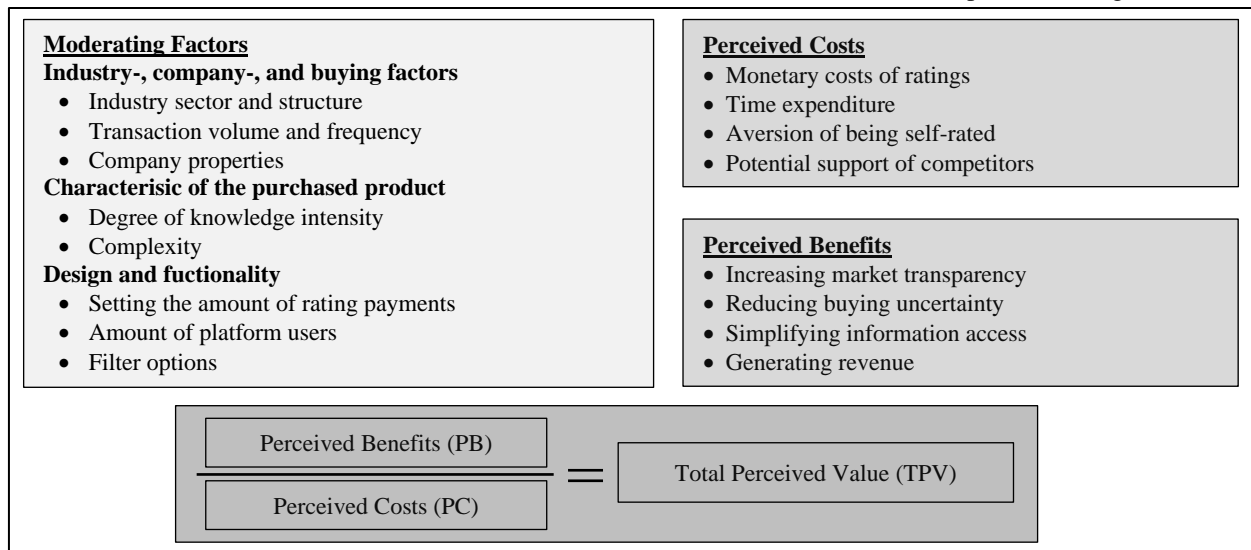
Regarding the data collection, we conduct semi-structured, qualitative interviews under the premise of openness (Döring & Bortz, 2016; Mayer, 2013). The interview questionnaire includes six elements containing information and questions about (1) the company, esp. the purchasing process; (2) the industry, esp. the market participants and overall transparency; (3) the concept description (the proposed business reputation system); (4) potential use cases; (5) the perceived value, and (6) emerging critique from buyers and sellers.

Finally, the interview material is analyzed for content paraphrasing, passages summarizing, core content synthesizing, and extracting inductive categories following Mayring's (2000) qualitative content analysis. The identified concepts incorporate the company's purchasing process, industry characteristics, reputation system usability factors, perceived benefits, and perceived costs.

### 4. Results

This study aims to generate insights into how B2B buyers assess the value of the proposed reputation system, with TPV defined as the ratio of PB and PC (Dodds et al., 1991). Here, 'how' refers to the perceived value derived from using the proposed reputation system and, on the other hand, to the criteria or dimensions by which the buyers assess the value of the business reputation system. The results are displayed in a visual form in Figure 2 below. The aspects are listed in descending order of perceived importance from the interviewees' perspectives.

In addition to the dimensions applied when assessing TPV, based on PB and PC, results can be derived on whether the respondents assign value to a



**Figure 2. Study results of perceived benefits, costs, and moderating effects**

reputation system and the proposed solutions. The results are displayed in Table 2. At this point, it needs to be underlined that these results refer to those transactions related to the company's main products. Independently of primary products, we ask every buyer to assess the reputation system's value for knowledge-intensive services. We assume greater value due to a higher buying uncertainty of such services (Lam et al., 2004). Unanimous, all buyers surveyed see the system here as clearly valuable.

**Table 2. Value for the reputation system for the surveyed companies**

Company	Valuable for companies' main products	Valuable for knowledge-intensive services
Company A	No	Yes
Company B	Partly	Yes
Company C	Yes	Yes
Company D	Partly	Yes
Company E	Partly	Yes
Company F	No	Yes
Company G	Yes	Yes
Company H	Yes	Yes

Company A is referenced to have its rating system and quality-ensuring processes established. Company B knows its suppliers well, acting in a market with only a few suppliers. However, the interviewee recognizes the value of finding suppliers not directly related to the company's main product in unknown markets. Company C also knows its suppliers well but indicated the value of using this system to inform about suppliers' current problems and considered it to improve their bargaining power. At Company D, most distributors are known, but the system seems valuable if additional information is provided, e.g., specific filter options. For company E, the system would not be relevant for all products, only for certain products, if quality criteria are met accurately. For company F, distributors are either known or easy to test, and the system does not provide value for their main products. Company G finds the system useful since the market is intransparent and sound quality is hard to identify. The market is equally intransparent for Company H, and the system appears useful for identifying high-quality providers.

## 5. Discussion

### 5.1. Perceived Benefits

Four main determinants substantiate the PB: increased market transparency, reduced transaction uncertainty, simplified information retrieval processes, and the possibility of generating additional

revenue. Market transparency stood out as the most relevant PB, exemplified by the following statement.

*"The less I know about the market and the more intransparent the situation, the more valuable the reputation system." Company D.*

This statement underlines the reputation system has great potential for increasing market transparency and reducing transaction uncertainty. Company B remarks that market transparency is a prerequisite for successful buying operations. All interviewees strongly agree that the system increases market transparency and see the main benefit in improving or gaining new market knowledge. The latter seems particularly interesting for new market entrants, as bigger companies B, C, and E explicitly articulated. These companies know their suppliers well and have a good market overview. Smaller buyers, who typically have a bad market overview, see the advantage primarily in creating market transparency. The reputation system might help companies, independent of the industry, increase transparency efficiently in new markets. Accordingly, we derive the following hypothesis.

***H<sub>1a</sub>: The better the market overview, the more the system's benefit lies in gaining knowledge about the quality of suppliers in untapped markets. H<sub>1b</sub>: The weaker the market overview, the more the system's benefit lies in gaining knowledge about the quality of suppliers in the operating market.***

The benefit seems particularly helpful in crowded markets with many different suppliers or highly complex markets associated with buying uncertainty. Results show that increased transparency is expected to decrease purchase uncertainty. The observation also supports that a high value is always attributed to the reputation system for knowledge-intensive services, known for high buying uncertainty (Lam et al., 2004). Thus, we expect the system to have a supportive effect on buying decisions there.

Furthermore, Company H emphasized the benefit of selecting reliable buyers.

*"In any case, the information is of value [in our industry]. Particularly to obtain information about the reliability of sellers but also about product availabilities." Company H.*

The main criterion for selecting reliable sellers depends on the degree of transparency and, thus, on transaction uncertainty. Thus, we formulate H<sub>2</sub>.

***H<sub>2</sub>: The higher the perceived transaction uncertainty, the higher the perceived benefits.***

The second aspect that fundamentally affects reputation system usage is the simplified information retrieval processes. The respondents see a primary benefit of the reputation system when additional information on the products is provided, e.g., whether

a specific manufacturer or distributor has a particular product in their portfolio. A filter function for products is desirable, so only those providers are displayed with ratings that offer the desired product.

*"I enter what I need, and the system tells me which distributors sell it. That would be helpful." Company D.*

Based on these considerations, we conclude that simplifying the information retrieval process about suppliers' reliability and product availabilities is a primary source of PB. Here, the tendency is clearly towards the more information within the reputation system, the better. Considering this finding in the discussion about TPV, we derive the subsequent hypothesis.

**H<sub>3</sub>: The more the perceived information retrieval is facilitated through the reputation system, the higher the perceived benefits.**

This hypothesis results again in the assumption that information retrieval is complex in those markets. On the other hand, the hypothesis indicates some implications regarding the system's functionality and design. The buyers evaluate the benefits even better if more information is provided. Information about the manufacturer's or distributor's product or service and product availabilities are particularly interesting here.

Another central mechanism of the system is the possibility of selling the information obtained regarding suppliers' quality and reliability. Buyers 'invest' a certain amount of money executing a positive 'transaction as rating.' They can subsequently sell this same rating to multiple other buyers within the reputation system, generating profit.

*"The expenditure of time is only justified if I can generate additional profit." Company A.*

This statement allows for the assumption that this monetary incentive is, in fact, necessary to induce buyers within the system to commit a certain amount of time to carry out ratings. This opportunity to generate additional revenue constitutes a third dimension of PB for buyers when they assess the system's value. However, it is striking that, although information trading is a central mechanism, it does not seem to be too crucial in the respondents' assessments. We believe this dynamic may be profoundly different when looking at high-competitive markets. Still, H4 can be formulated as follows.

**H<sub>4</sub>: The higher the perceived potential for generating additional revenue, the higher the perceived benefits.**

When conducting the interviews, we observed that the buyers were more interested in receiving information than giving information. However, we consider this mechanism as an incentive for participating in the system and submitting ratings and

thus may be one fundamental factor for the system to be used. However, given that this mechanism is instead viewed as a prerequisite for the usage, it should also be seen as just that and not as a central benefit-generating aspect like increased transparency (H<sub>1</sub>), or reduced transaction uncertainty (H<sub>2</sub>).

We could not identify a common consensus on the selling price of ratings, even though there was no question that it has an economic value in every market. We conclude that the price is primarily affected by the product or service.

## 5.2. Perceived Costs

Company A's statement above indicates that time costs play a significant role when assessing the reputation system's value. The time and effort consumed for providing a rating need to be justified. This fact leads to the cost dimensions buyers consider when evaluating the system's value. For submitting ratings, a time investment is required. Time effort is seen as PC for the system, for which compensation is demanded to justify these PCs. Company E acknowledges in this context the existence of time costs but evaluates these in a much more relative way due to the simplified information-gathering process:

*"It's just a shift in the time spent. You get information faster and save time, which you later use in the information exchange process. The time required would be the same." Company E.*

In any case, the respondents interviewed consider time costs to play a significant role in evaluating PC and, thus, the TPV. Although the significance for PC is assessed differently from our interviewees, hypothesis H5 reads as follows:

**H<sub>5</sub>: The higher the perceived time costs to use the system, the higher the perceived costs.**

H<sub>5</sub> builds on an aspect originating from the reputation system's functionality. That means that these time costs accrue independently of the industry. It would be helpful to keep the time required to provide ratings low, thus keeping the PC for a buyer low while increasing the TPV. This aspect also points to how the system should be designed regarding functionality and features. Providing sophisticated filter options or a simplified trading process can consume less time, lowering PC and increasing TPV.

Furthermore, one interviewee questioned how much value a rating information is worth.

*"Who is then willing to pay money for this information? [...] The information definitely has a value, but am I willing to pay the value?" Company F.*

This statement points to another central component of PC: the costs of buying a rating. For buyers, the price of a good or service is vital for

decision-making. The fact that for obtaining ratings, an extra fee needs to be paid to get information on a seller's reliability on top of the actual price is rated critical by some respondents. For company F, e.g., this fact is a knockout criterion, even though for its industry, it would help massively gather a better market overview, and although the mechanism offers the possibility even to generate profits in principle. Company E characterizes this matter:

*"I think the most challenging part is that you must tip first. Difficult – because there's always that risk that you won't get it back again." Company E.*

Hence, we conclude that a rating investment affects the PC negatively. In the reputation system's TPV valuation, this matter is reflected in a reduction of TPV as PC increases due to the perceived risk of potential monetary losses. Thus, H6 can be derived about PC-relevant dimensions and their effect:

**H<sub>6</sub>: The higher the perceived risk of not getting back the rating investments to perform a positive payment rating, the higher the perceived costs.**

H<sub>6</sub> allows for formulating practice recommendations. Since this seems to be a severe obstacle to using such a system, we consider it a worthwhile research avenue to examine how buyers assess the system when a seller offers a discount instead of a tip, expected to be compensated by a rating buyer. Price discounts and expecting monetary ratings can also be used as a trust signal by the seller; for instance, the seller offers the product at a lower price, considering the monetary rating a withdrawal, not an investment. This setting of the reference price probably switches the whole dynamic of cost perception.

In addition, some companies argue to avoid using such a system because they feared being rated inadequately and expressed concerns about helping competitors. However, both facets did not appear to have a specific cost dimension but referred to an unspecified caution. Consequently, no hypotheses were formulated in this regard.

## 5.2. Moderating Factors

As moderating factors, we identified industry-, company-, and procurement process-dependent factors and factors related to the reputation system's design and functionality as well as the product's characteristics. These factors moderate the interplay of PB, PC, and TPV.

For industry-, company-, and procurement process-dependent factors, the industry's role in which the company operates is the most relevant moderator. The industry refers mainly to the degree of market

transparency or whether it is a buyer's or a seller's market. Company E outlines this as follows:

*"If you need a very specific product that you can only get from one manufacturer anyway, a reputation system is irrelevant." Company E.*

The above statement shows that the PB derived from lowered transaction uncertainty H<sub>2</sub> and facilitated information retrieval H<sub>3</sub> are less critical in a seller market context.

The company itself seems to play a moderating role as well. On this, one respondent stated:

*"The bigger the company, the better you know the market already. But if I'm a company and I'm very local, and now I want to expand and have a local footprint, but don't have a clue [about the market] - then of course that [the reputation system] is worth gold." Company B.*

Additionally, it was mentioned several times that the more long-term oriented the relationship is, the less benefit is achieved through the reputation system. Such representative statements show that in terms of the company's impact, the company size and its quality standards relativize the relevance of the level of PB or PC. Accordingly:

**M<sub>1</sub>: H2-H4 lose in strength while H5-H6 are intensified (1) when a high bargaining power of suppliers characterizes the market; (2) when the buyer's company's size or established processes can ensure quality standards; or (3) when a long-term relationship is desired.**

From this, we can draw practical conclusions. A reputation system is particularly of value in markets with many suppliers and (small) firms without sophisticated quality-ensuring processes and markets with one-off or short-term business relationships.

The characteristics of the purchased product primarily refer to the degree of the knowledge intensity of the product or service to be purchased. This aspect is of major relevance since all eight respondents attribute a high value to the reputation system in the context of knowledge-intensive services such as management consulting or education services. The value (TPV) is assessed by weighing the hypotheses formulated under H<sub>2-6</sub>. Due to the nature of knowledge-intensive services, e.g., a high number of trust properties of the promised service, the PBs are perceived as more and PCs less relevant. Therefore, we found proof in all interviews, whereby we gained the impression that the PB was even higher for small companies. The following representative statements underpin our impression:

*"If you need a management consultancy [...], then it is of great value if you have the right one and if there are people who can evaluate that [...]. This information is worth a lot." Company G.*

*"I would definitely be willing to pay [for reliable information]. These investments [educational courses] make you think twice or even three times." Company F.*

Accordingly, we define  $M_2$  and conclude that reputation systems may be of particular interest for knowledge-intensive services.

**$M_2$ :  $H_{2-4}$  are intensified, and  $H_{5,6}$  are mitigated for knowledge-intensive services, leading to a very high PB in this context.**

Also, factors for the design and functionality of the reputation system were mentioned, and the respondents have stated several aspects, either intensifying or weakening PB and PC in reputation system usage. Those mainly refer to preferences regarding the information price setting approach, additional value through, e.g., supplementary product information, filter options, or the platform's reach. Several implications in this context can be derived from these eight interviews. For example:

*"I need to judge the validity of the other buyers' statements. It would be important that they identify themselves with what they do, i.e., how long have they been with the company, what function do they have [...]?" Company D.*

**$M_3$ :  $H_{2-4}$  are intensified, and  $H_{5,6}$  are mitigated if the reputation system's functionality, features, and design meet potential users' demands.**

In sum, TPV is positive when the PB outweighs the PC. The mediating factors can heavily influence the coinage of PB and PC and play a decisive role in determining whether a reputation system is of value to a company. The proposed solutions seem to positively and negatively affect the TPV for buyers. The idea of selling ratings was perceived as something positive, monetary ratings appeared neutral, and counter-evaluations tended to be seen as unfavorable by the interviewees. However, in the interviewees, it cannot be pinned down to a specific aspect. There seems to be a general aversion to being rated by sellers. We interpret this result as a positive sign that a buyer would try to stay beneath a threshold to avoid ratings becoming visible to other sellers.

## 6. Conclusion

Reputation systems seem to be a valuable tool for promoting trust and cooperation in several business contexts. The study aimed to determine how buyers assess reputation systems' value in B2B contexts against three newly proposed solutions to design business reputation systems. These solutions include selling ratings, conducting ratings as payments, and using counter-ratings. We interviewed informants

from eight companies representing different industries and sizes, receiving manifold insights into various business contexts. In our initial setting, we explored the added value of these solutions for reputation systems in these business contexts and collected insights on perceived benefits (PB) and perceived costs (PC) to assess the total perceived value (TPV).

Our findings suggest that such a system is useful for companies acting in less transparent markets and also helps in some situations when companies already have a broad market overview. We exploratively identified value and cost dimensions, as well as moderating factors. All need to be examined in more detail to understand better their role in the value assessment of business reputation systems. The perceived value of the investigated reputation system varies depending on the market conditions and the business context. Unequivocally, all buyers find the system valuable for assessing the quality of knowledge-intensive services. We take this as confirmation of our assumption that the value of such systems increases the higher the buying uncertainty is. As the interviewed buyers indicate, the three solutions seem promising for designing a new class of reputation systems – business reputation systems. This system class might have a profound economic impact if they are put into use and work.

Our insights help structure the most significant value drivers in varying contexts helping researchers better understand the dynamics of business reputation systems, and contribute to the knowledge base on how reputation systems need to be designed in terms of functionality and features to increase the value for buyers. Due to the relatively small sample size, this study is limited in grasping the full complexity of every business context, leaving some business aspects untouched.

Reputation systems for B2B contexts will likely become a hot topic in future information systems research, leaving plenty of room for further research questions, including design and business management aspects. Further research should aim to improve the system design and examine designing business reputation systems with the lens of real-world applicability. Furthermore, we encourage future research to investigate the value of such systems for sellers and the applicability and usefulness of the proposed design solutions in more specific business scenarios. Other research perspectives might complement our initial lens on business reputation systems by studying potential implications on decision behavior, humans, companies, procurement, negotiation, marketing, (lemon) markets, economics, or others.



## References

- Akerlof, G. A. (1970). The Market for Lemons: Quality Uncertainty and the Market Mechanism "in *Quarterly Journal of Economics*, vol. 84.
- Ansari, S., & Gupta, S. (2021). Review Manipulation: Literature Review, and Future Research Agenda. *Pacific Asia Journal of the Association for Information Systems*, 13(4), 97–121.
- Ba, S., & Pavlou, P. A. (2002). Evidence of the Effect of Trust Building Technology in Electronic Markets: Price Premiums and Buyer Behavior. *MIS Quarterly*, 26(3), 243–268. <https://doi.org/10.2307/4132332>
- Bolton, G., Katok, E., & Ockenfels, A. (2004). How Effective are Electronic Reputation Mechanisms? An Experimental Investigation. *Management Science*, 50(11), 1587–1602. <https://doi.org/10.1287/mnsc.1030.0199>
- Bromley, D. B. (2001). Relationships Between Personal and Corporate Reputation. *European Journal of Marketing*, 36(3/4), 316–334.
- Cai, Y., & Zhu, D. (2016). Fraud Detections for Online Businesses: A Perspective from Blockchain Technology. *Financial Innovation*, 2(1), 1–10. <https://doi.org/10.1186/s40854-016-0039-4>
- Chen, S., He, Q., & Xiao, H. (2022). A Study on Cross-Border E-Commerce Partner Selection in B2B Mode. *Electronic Commerce Research*, 22(2), 1–21. <https://doi.org/10.1007/s10660-020-09403-6>
- Dellarocas, C. (2003). The Digitization of Word of Mouth: Promise and Challenges of Online Feedback Mechanisms. *Management Science*, 49(10), 1407–1424.
- Dikow, H., Hasan, O., Kosch, H., Brunie, L., & Sornin, R. (2015). Improving the Accuracy of Business-to-Business (B2B) Reputation Systems through Rater Expertise Prediction. *Computing*, 97(1), 29–49. <https://doi.org/10.1007/s00607-013-0345-x>
- Dimoka, A., Hong, Y., & Pavlou, P. A. (2012). On Product Uncertainty in Online Markets: Theory and Evidence. *MIS Quarterly*, 36(2), 395–426. <https://doi.org/10.2307/41703461>
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, 28(3), 307–319. <https://doi.org/10.1177/002224379102800305>
- Döring, N., & Bortz, J. (2016). *Forschungsmethoden und Evaluation in den Sozial- und Humanwissenschaften* (5. Aufl.). Springer. <http://dx.doi.org/10.1007/978-3-642-41089-5> <https://doi.org/10.1007/978-3-642-41089-5>
- Filippas, A., Horton, J. J., & Golden, J. (2018). Reputation Inflation. In *Proceedings of the 2018 ACM Conference on Economics and Computation*, Ithaca.
- Forman, C., Ghose, A., & Wiesenfeld, B. (2008). Examining the Relationship Between Reviews and Sales: The Role of Reviewer Identity Disclosure in Electronic Markets. *Information Systems Research*, 19(3), 291–313. <https://doi.org/10.1287/isre.1080.0193>
- Fradkin, A., Grewal, E., & Holtz, D. (2018). The Determinants of Online Review Informativeness: Evidence from Field Experiments on Airbnb. *SSRN Electronic Journal*. Advance online publication. <https://doi.org/10.2139/ssrn.2939064>
- Ghose, A. (2009). Internet Exchanges for Used Goods: An Empirical Analysis of Trade Patterns and Adverse Selection. *MIS Quarterly*, 33(2), 263–291.
- Gutt, D., Neumann, J., Zimmermann, S., Kundisch, D., & Chen, J. (2019). Design of Review Systems – A Strategic Instrument to Shape Online Reviewing Behavior and Economic Outcomes. *The Journal of Strategic Information Systems*, 28(2), 104–117. <https://doi.org/10.1016/j.jsis.2019.01.004>
- He, S., Hollenbeck, B., & Proserpio, D. (2022). The Market for Fake Reviews. *Marketing Science*, Article mksc.2022.1353. Advance online publication. <https://doi.org/10.1287/mksc.2022.1353>
- Hemrich, S. (2023). Business Reputation Systems Based on Blockchain Technology—A Risky Advance. In *Proceedings of the 31st European Conference on Information Systems (ECIS)*, Kristiansand.
- Hemrich, S., Bobolz, J., Beverungen, D., & Blömer, J. (2023). Designing Business Reputation Ecosystems—A Method for Issuing and Trading Monetary Ratings on a Blockchain. In *Proceedings of the 31st European Conference on Information Systems (ECIS)*, Kristiansand.
- Herhausen, D., Miočević, D., Morgan, R. E., & Kleijnen, M. H. P. (2020). The Digital Marketing Capabilities Gap. *Industrial Marketing Management*, 90, 276–290. <https://doi.org/10.1016/j.indmarman.2020.07.022>
- Ismail, R., Boyd, C., Jøsang, A., & Russel, S. (2003). Strong Privacy in Reputation Systems. In *LNCS: Vol. 2003, Proceedings of the 4th International Workshop on Information Security Applications* (1–8). Springer. <http://folk.uio.no/josang/publications.html>
- Jøsang, A. (2007). Trust and Reputation Systems. In A. Aldini & R. Gorrieri (Eds.), *Lecture Notes in Computer Science: Vol. 4677. Foundations of Security Analysis and Design IV: FOSAD 2006/2007 Tutorial Lectures* (pp. 209–245). Springer.
- Jøsang, A., & Goldbeck, J. (2009). Challenges for Robust Trust and Reputation Systems. In *5th International Workshop on Security and Trust Management (STM 2009)* (pp. 1–12). Elsevier.
- Kreps, D. M., & Wilson, R. (1982). Reputation and Imperfect Information. *Journal of Economic Theory*, 27(2), 253–279.
- Lam, S. Y., Shankar, V., Erramilli, M. K., & Murthy, B. (2004). Customer Value, Satisfaction, Loyalty, and Switching Costs: An Illustration from a Business-to-Business Service Context. *Journal of*

- the Academy of Marketing Science*, 32(3), 293–311. <https://doi.org/10.1177/0092070304263330>
- Lappas, T., Sabnis, G., & Valkanas, G. (2016). The Impact of Fake Reviews on Online Visibility: A Vulnerability Assessment of the Hotel Industry. *Information Systems Research*, 27(4), 940–961. <https://doi.org/10.1287/isre.2016.0674>
- Luhmann, N. (2017). *Trust and Power* (C. Morgner & M. King, Trans.). Polity.
- Marshall, M. N. (1996). Sampling for Qualitative Research. *Family Practice*, 13(6), 522–526.
- Mayer, H. O. (2013). *Interview und schriftliche Befragung: Grundlagen und Methoden empirischer Sozialforschung* (6. Aufl.). Oldenbourg Wissenschaftsverlag. <https://doi.org/10.1524/9783486717624>
- Mayring, P. (2000). Qualitative Inhaltsanalyse: Forum Qualitative Sozialforschung/ Forum: Qualitative Social Research. 1, 2(20). <https://doi.org/10.17169/fqs-1.2.1089>
- Möhlmann, M., Teubner, T., & Graul, A. (2019). Leveraging Trust on Sharing Economy Platforms: Reputation Systems, Blockchain Technology and Cryptocurrencies. In R. Belk, G. M. Eckhardt, & F. Bardhi (Eds.), *Handbook of the Sharing Economy* (pp. 290–302). Elgar.
- Moreno, A., & Terwiesch, C. (2014). Doing Business with Strangers: Reputation in Online Service Marketplaces. *Information Systems Research*, 25(4), 865–886. <https://doi.org/10.1287/isre.2014.0549>
- Neumann, J., & Gutt, D. (2019a). He Who Pays the Piper Calls the Tune: Online Review Elicitation by Sellers and Third-Party Platforms in B2B Markets. In *ECIS 2019 Proceedings*, Uppsala.
- Neumann, J., & Gutt, D. (2019b). Money Makes the Reviewer Go Round—Ambivalent Effects of Online Review Elicitation in B2B Markets. In *25th Americas Conference on Information Systems (AMCIS)*, Cancun.
- Nosko, C., & Tadelis, S. (2015). *The limits of reputation in platform markets: an empirical analysis and field experiment* [NBER Working Paper No. 20830]. National Bureau of Economic Research. <https://www.nber.org/papers/w20830.pdf>
- Pereira, J., Tavalaei, M. M., & Ozalp, H. (2019). Blockchain-Based Platforms: Decentralized Infrastructures and its Boundary Conditions. *Technological Forecasting & Social Change*, 146, 94–102. <https://doi.org/10.1016/j.techfore.2019.04.030>
- Pornpitakpan, C. (2004). The Persuasiveness of Source Credibility. A Critical Review of Five Decades' Evidence. *Journal of Applied Social Psychology*, 34(2), 243–281.
- Resnick, P., & Zeckhauser, R. (2002). Trust Among Strangers in Internet Transactions: Empirical Analysis of eBay's Reputation System. In M. R. Baye (Ed.), *The Economics of the Internet and E-Commerce* (11th ed., pp. 127–157). JAI.
- Rice, S. C. (2012). Reputation and Uncertainty in Online Markets: An Experimental Study. *Information Systems Research*, 23(2), 436–452.
- Ryan, P. A. (2017). Smart Contract Relations in e-Commerce: Legal Implications of Exchanges Conducted on the Blockchain. *Technology Innovation Management Review*, 7(10), 14–21.
- Sampath, K., Saygin, C., Grasman, S. E., & Leu, M.-C. (2006). Impact of Reputation Information Sharing in an Auction-Based Job Allocation Model for Small and Medium-Sized Enterprises. *International Journal of Production Research*, 44(9), 1777–1798.
- Sonneberg, C., & vom Brocke, J. (2012). Evaluations in the Science of the Artificial—Reconsidering the Build-Evaluate Pattern in Design Science Research. In *International Conference on Design Science Research in Information Systems (DESIRIST 2012)* (pp. 381–397). Springer.
- Steward, M. D., Narus, J. A., & Roehm, M. L. (2018). An Exploratory Study of Business-to-Business Online Customer Reviews: External Online Professional Communities and Internal Vendor scorecards. *Journal of the Academy of Marketing Science*, 46, 173–189.
- Sullivan, Y. W., & Kim, D. J. (2018). Assessing the Effects of Consumers' Product Evaluations and Trust on Repurchase Intention in E-Commerce Environments. *International Journal of Information Management*, 39, 199–219. <https://doi.org/10.1016/j.ijinfomgt.2017.12.008>
- Thierer, A., Koopman, C., Hobson, A., & Kuiper, C. (2016). How the Internet, the Sharing Economy, and Reputational Feedback Mechanisms Solve the Lemons Problem. *U. Miami L. Rev.*, 70(3), 830–878.
- Wan, Y., & Nakayama, M. (2014). The Reliability of Online Review Helpfulness. *Journal of Electronic Commerce Research*, 15(3), 179–189.
- Williamson, O. E. (1993). Calculativeness, Trust, and Economic Organization. *The Journal of Law and Economics*, 36(1), 453–486. <https://doi.org/10.1086/467284>
- Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(3), 2–22. <https://doi.org/10.1177/002224298805200302>
- Zhu, K. (2002). Information Transparency in Electronic Marketplaces: Why Data Transparency May Hinder the Adoption of B2B Exchanges. *Electronic Markets*, 12(2), 92–99.