



In Stars We Trust – A Note on Reputation Portability Between Digital Platforms

Maik Hesse · Timm Teubner · Marc T. P. Adam

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Abstract Complementors accumulate reputation on an ever-increasing number of online platforms. While the effects of reputation within individual platforms are well-understood, its potential effectiveness across platform boundaries has received much less attention. This research note considers complementors' ability to increase their trustworthiness in the eyes of prospective consumers by importing reputational data from another platform. The study evaluates this potential lever by means of an online experiment, during which specific combinations of on-site and imported rating scores are tested. Results reveal that importing reputation can be advantageous – but also detrimental, depending on ratings' values. Implications for complementors, platform operators, and regulatory bodies concerned with online reputation are considered.

Keywords Reputation portability · Platforms · Trust · Sharing economy · Online experiment

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M. Hesse (✉) · T. Teubner
Einstein Center Digital Future, TU Berlin, Einsteinufer 17,
10587 Berlin, Germany
e-mail: m.hesse@strategyand.de.pwc.com

T. Teubner
e-mail: teubner@tu-berlin.de

M. T. P. Adam
School of Information and Physical Sciences, The University of
Newcastle, University Drive, Callaghan, NSW 2308, Australia
e-mail: marc.adam@newcastle.edu.au

1 Introduction

Recent years have seen a flourishing of multi-sided market platforms, for instance, in the domains of accommodation sharing, mobility services, and crowd work. These digital platforms penetrate all levels of economic activity (“platformization”), shaping the way in which individuals consume and provide services and products (De Reuver et al. 2018; Hein et al. 2020; Van Alstyne et al. 2016b). While reputation is a crucial instrument for complementors (e.g., sellers, drivers, hosts) to attract demand, the reputation they have built on one platform is, as of today, of limited use across platform boundaries. As noted by Constantinides et al. (2018), current reputation systems “create an entry barrier for [those] who have not yet established a reputation” on a particular platform – a phenomenon also known as the “cold-start” problem (Kokkodis and Ipeirotis 2016; Wessel et al. 2017). A potential approach to overcoming this issue is *reputation portability*. Reputation portability refers to the idea of leveraging existing reputation from one platform by using it as a trust signal on another (Hesse and Teubner 2020; Teubner et al. 2019).¹ For example, consider an Airbnb host looking into posting listings on a competing platform such as Homestay.com (Constantinides et al. 2018). Rather than re-building reputation from scratch, portability would allow the complementor to import their reputational history from the incumbent platform as a credential vis-à-vis prospective guests.

The concept of cross-platform reputation portability and its potential benefits have already been discussed in the

¹ Note that the concept of reputation portability requires delineation from the more general notion of data portability under GDPR Art. 20. Reputational data is (as of August 2021) not considered to fall under this regulation.

early stages of platformization (Resnick et al. 2000). However, as of today, large-scale use of reputational data across platform boundaries has not been observed.² The European Commission noted this lack of integration as problematic due to its potential to hinder platform competition and calls for research on means, benefits, and the underlying mechanisms of reputation portability (European Commission 2016, 2017, 2018). Looking at crowd work platforms, the German government has gone even further and actively advocated for worker reputation to be made portable (BMAS 2020; Lambrecht and Heil 2020). However, only little scholarly work has investigated the effects of transferring reputation across platform boundaries (Teubner et al. 2019). Hence, despite building momentum at national and European levels, a scientifically-grounded understanding of the potential risks and boundary conditions of reputation portability is lacking. However, such insights are crucial for building further knowledge in the area of reputation portability and leaves complementors, platforms, and regulatory bodies with limited guidance when it comes to decision- and policy making.

First empirical evidence shows that imported reputation in the form of an excellent rating (e.g., “5 stars”) can serve as an effective signal to stimulate consumers’ trust, particularly when the source and target platforms operate in the same application context (Otto et al. 2018; Teubner et al. 2020). Being able to import existing rating from one platform to another could be appealing for complementors interested in operating on several platforms (“multi-homing”). However, there is currently no research available on whether the trust-promoting effect of imported reputation extends to other-than-excellent ratings and, if so, to what extent this is constrained by an existing on-site rating. Without shedding light on these potential boundary conditions, it is unclear for which combinations imported ratings could be effective and whether complementors would actually benefit from importing their reputational data.

To address this gap, we investigate *how different levels of on-site and imported ratings drive evaluations of complementors’ trustworthiness in the eyes of prospective consumers and how ratings from different platforms interact*. To do so, we conceptualize a model that captures the trust effects of different imported and on-site reputation

combinations. We conduct an online experiment to estimate the model’s parameters and explore under which circumstances complementors could benefit from importing a rating. Our results provide insights into the boundary conditions of the trust-promoting effects of imported ratings. Based on this, we consider theoretical and practical implications for complementors, platform operators, and regulatory bodies.

2 Related Work and Theoretical Background

As of 2021, reputation portability has not been widely adopted in practice (with notable exceptions as stated above). Yet, calls for research on the matter have repeatedly occurred in academic literature for almost two decades. Further, over the past five years, there has been increasing political pressure on platforms to make reputation portable. In the early days of e-commerce, Resnick et al. (2000) stated that the lack of reputation portability is problematic as “[l]imited distribution of feedback limits its effectiveness” (p. 48). Interestingly, in the mid-1990s, Amazon allowed customers to import existing eBay ratings, and the latter threatened to press charges claiming these ratings to be proprietary content (Dellarocas et al. 2009; Resnick et al. 2000). About a decade later with more platforms emerging and the advent of the sharing economy, Dellarocas et al. (2009) made a case for portable reputation: “the absence or limited portability results in a substantial exit barrier [which] prevents honest sellers to freely enter in other markets” (p. 468). The notion of managing online reputation by connecting profiles across platforms has since been picked up regularly (Botsman 2012; Gans 2018; Puschmann and Alt 2016). These calls unanimously assume that the trust-building potential of online ratings also applies to *imported* ones.

From a theoretical perspective, this research draws upon signaling theory to conceptualize “imported” reputation as a deliberate device for complementors to signal trustworthiness (Mavlanova et al. 2012; Spence 1973). Similar to the theory’s original application in economics (educational track records on the job market), imported ratings are “observable characteristics attached to the individual that are subject to manipulation by him [or her]” (Spence 1973). Moreover, building and maintaining a “good” reputation is costly (Dunham 2011) – particularly when doing so on several platforms. Several recent studies have leveraged signaling theory as an underpinning for reputation portability. Kokkodis and Ipeirotis (2016) studied the predictive power of signals for future performance across job categories (within the confines of the crowd work platform oDesk). Considering a cross-platform signaling scenario, Otto et al. (2018) found that ride-sharing

² Note that several notable exceptions exist. The e-commerce platforms TrueGether.com and Bonanza.com (~ 40,000 sellers globally and 25 million items) allow sellers to import reputational data from eBay and Amazon (Bonanza 2019; TrueGether 2019). While Bonanza translates eBay ratings into its own 5-star scheme, TrueGether also allows for the import and display of written feedback. Moreover, Airbnb supports the *export* of users’ reputation by providing a ready-to-use HTML code snippet that complementors can display on other websites.

consumers exhibited higher willingness to pay and trust towards potential drivers if those drivers’ Airbnb ratings were available (using a fixed 4.0 star rating). Teubner et al. (2020) confirmed the trust-building potential of importing star ratings (a fixed 5.0-star rating) across three common application areas (accommodation sharing, ride/mobility services, commodity exchange) and identified *fit* between source and target context as a driver of this effect. However, the authors note that the existing studies neither consider (1) the availability of *both* on-site and imported rating simultaneously nor do they (2) account for *varying or sub-standard rating scores*.

3 Reputation Portability Scenario and Hypotheses

Consider a multi-homing complementor who has an existing track record on an *incumbent* platform (*i*) and has additionally started to operate on an *entrant* platform (*e*). Reputation on both platforms is conceptualized as a rating score ranging between 1.0 and 5.0 stars (i.e., the most common system). The complementor has acquired a rating of r_i on the incumbent platform and may (or may not) have already acquired an on-site rating of r_e on the entrant platform. We consider the complementor’s signaling decision, that is, whether to import their rating r_i from the incumbent to the entrant platform. The stylized function $f(r_e, r_i)$ describes the relation between the complementor’s (on-site and imported) rating scores and their trustworthiness in the eyes of prospective consumers. To be able to account for their individual and interactive effects, the two ratings r_e and r_i are not conflated into a single score but displayed separately. This yields four conceptual cases: (1) no on-site rating exists and no rating is imported; (2) on-site rating r_e exists and no rating is imported; (3) no on-site rating exists and a rating r_i is imported; (4) on-site rating r_e exists and a rating r_i is imported. The “trust function” $f(r_e, r_i)$ can hence be formalized as

relationship captures the association between rating and trustworthiness. If both on-site and imported ratings exist (4), we allow for interaction between ratings (δ_4). A pair-wise comparison of all four cases results in several decision boundaries depending on the availability of rating scores r_e and r_i . First, to decide whether to import a rating of r_i if no on-site rating r_e is available, the complementor compares cases (1) and (3). Equating and solving for r_i yields the import threshold

$$r_i > r^* = \frac{\alpha_1 - \alpha_3}{\gamma_3}. \tag{2}$$

Thus, the complementor will import an incumbent rating if it is greater than r^* . Second, if an on-site rating exists, comparing cases (2) and (4) yields⁴

$$r_i > r^{**}(r_e) = \frac{(\alpha_2 - \alpha_4) + (\beta_2 - \beta_4)r_e}{\gamma_4 + \delta_4 r_e} \tag{3}$$

Building on the results of extant literature on on-site reputation and the emerging work on reputation portability, we consider on-site and imported ratings as signals for the complementor’s trustworthiness from the consumer’s perspective. Indeed, as previous research has shown, “good” on-site reputation is an effective trust signal in online transactions (Dellarocas et al. 2009; Qiu et al. 2018; Tadelis 2016). Also, a high imported rating can facilitate consumer trust in the complementor (Otto et al. 2018; Teubner et al. 2020). Yet, existing work has neither considered the effectiveness of different rating *values*, nor the interplay of on-site and imported ratings in promoting trust. Based on the overarching theoretical framing of (cross-platform) signaling and previous work, we argue that imported ratings operate similarly to on-site ratings in that higher imported rating scores will, *ceteris paribus*, yield higher trustworthiness. Importantly, however, this does not imply that importing a rating will always be beneficial compared to not displaying any rating at all.

$$f_j(r_e, r_i) = \alpha_j + \beta_j r_e + \gamma_j r_i + \delta_j r_e r_i = \begin{cases} \alpha_1 & (j = 1) \\ \alpha_2 + \beta_2 r_e & (j = 2) \\ \alpha_3 + \gamma_3 r_i & (j = 3) \\ \alpha_4 + \beta_4 r_e + \gamma_4 r_i + \delta_4 r_e r_i & (j = 4) \end{cases} \tag{1}$$

where the parameter vectors $\alpha, \beta, \gamma, \delta$ capture the effects of the rating scores r_e and r_i on the complementor’s trustworthiness across the four cases ($j = 1, 2, 3, 4$).³ For the first case (1), a single coefficient α_1 suffices. For the cases, in which *either* an on-site rating (2) *or* an imported rating (3) exists, a linear

H₁ The trust-promoting effect of an *imported* rating is driven by the rating’s value ($\gamma_3 > 0$).

Importantly, as captured by case (4), a complementor may not only have an imported rating but also an on-site rating. This raises the question of how the consumer will respond to

³ Please note that $f_j(r_e, r_i)$ represents a conceptual function here and not a regression. We hence do not include residual/ error terms in this representation.

⁴ As opposed to r^* , note that r^{**} is not a constant but a function of the on-site rating.

the availability of two (potentially different) ratings. According to signaling theory, the availability of two ratings requires the consumer to assess two *different* signals for the *same* quality (i.e., trustworthiness). Both signals are meaningful in the sense that maintaining a good reputation on either platform is costly for the complementor. Hence, it would not be reasonable for the consumer to disregard either of the two signals. At the same time, it is the nature of signals that they are “inherently noisy” and serve as an *indicator* for the signaled quality rather than as *proof* (de Haan et al. 2011). Thus, in the presence of two signals (rather than one), either one renders the respective other more reliable. While it is not clear, *ex ante*, whether both signals will receive similar weighting by the consumer, we expect that an improvement in one rating has a – *ceteris paribus* – positive effect on the trust-building effect of the respective other. In other words, we hypothesize a positive interaction δ_4 between the on-site and imported rating scores.

H₂ The trust-promoting effect of an *imported* rating is stronger for higher values of the *on-site* rating – and vice versa ($\delta_4 > 0$).

4 Method

To test our hypotheses and estimate the outlined *trust function*'s parameters, we conducted an online experiment. The main dependent variable was prospective consumers' trust in the displayed complementor. We systematically varied the complementor's on-site and imported ratings in terms of availability (yes/no) and, provided that the rating was available, its value.

4.1 Procedure and Sample

We recruited 500 participants using Prolific.co, which has been praised for its data quality, subject diversity, and option to pre-screen participants (Palan and Schitter 2018; Peer et al. 2017). We pre-filtered participants so that they had at least some experience in online shopping and to represent a gender-diverse and multi-national subject pool. Respondents opted in for participation, received 0.80£ upon successful completion, and took an average time of 74 s to complete the experiment. Seven of 500 participants timed out and were excluded from further analysis. The final sample hence included 493 participants (age between 18 and 73 years; mean = 35.0, median = 32; 55.6% female).

4.2 Stimulus Material

Participants took the role of consumers and decided on booking a stay with a complementor on the fictional

accommodation platform *Happystay.com* (Appendix A; available online via <http://link.springer.com>).

4.3 Treatment Design

Following a 2×2 between-subjects design, each participant experienced only one of the four scenarios outlined in the following. The displayed complementor either had no on-site rating (cases 1 and 3) or a rating r_e (randomly drawn from {1.0, 1.5, ..., 5.0}); cases 2 and 4). Additionally, as outlined above, the complementor had either imported a rating r_i from the incumbent platform (again, randomly drawn from {1.0, 1.5, ..., 5.0}) or no rating was imported. All possible combinations of rating scores were tested where the distribution was informed by the skewed values observed on actual platforms (Schoenmueller et al. 2018). Thus, although ratings above 3.0 stars occurred more frequently, the allocation of participants across cases (1) to (4) was mainly driven by the number of possible rating combinations per condition and by ensuring that at least a couple of observations were obtained for each possible combination. Besides rating *scores*, we also varied the *number* of ratings the complementor had received (ranging from lower single-digits to high double-digits) as a control variable. The allocation of participants across the treatment conditions and specific rating scores is reported in Appendix B.

4.4 Measurement

As the main dependent variable, we surveyed participants' *trust in the complementor* (Gefen 2002). Moreover, we controlled for participants' trust in the incumbent platform, their general trusting disposition (Gefen 2000), and, additionally, individual risk-affinity (Dohmen et al. 2011). All variables were measured on single-item 11-point Likert scales. Descriptive statistics on the participant-specific controls and the measurement instrument are provided in Appendices B and C. Complementary analysis reported in Appendix B confirmed that there were no systematic differences in participants' demographics across treatments.

5 Results

5.1 Trust-building Effect of Imported Reputation (H₁)

We conducted a set of OLS regressions to estimate the parameters α , β , γ , and δ of the trust function as specified in (1). Table 1 reports the results for all four cases (1–4). The dependent variable (*trust in complementor*) was standardized to the interval [0, 1]. Rating scores range from 1.0 to 5.0 (stars).

The results are illustrated in Fig. 1a (left; cases 1, 2 and 3) and Fig. 1b (right; cases 2 and 4), respectively. First, if no on-

Table 1 Parameter estimates; OLS regressions; standard errors in parentheses

	DV: Trust in complementor			
	Case (1) (no rating)	Case (2) (on-site only)	Case (3) (imported only)	Case (4) (both ratings)
Constant	0.350*** (0.038)	− 0.004 (.075)	0.016 (0.082)	0.259 *(0.116)
On-site Rating		0.128*** (.021)		− 0.029 (0.032)
Imported Rating			0.116*** (0.023)	− 0.006 (0.033)
Interaction				0.024** (0.009)
Observations	24	81	83	305
Adjusted R ²	–	0.308	0.237	0.181

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

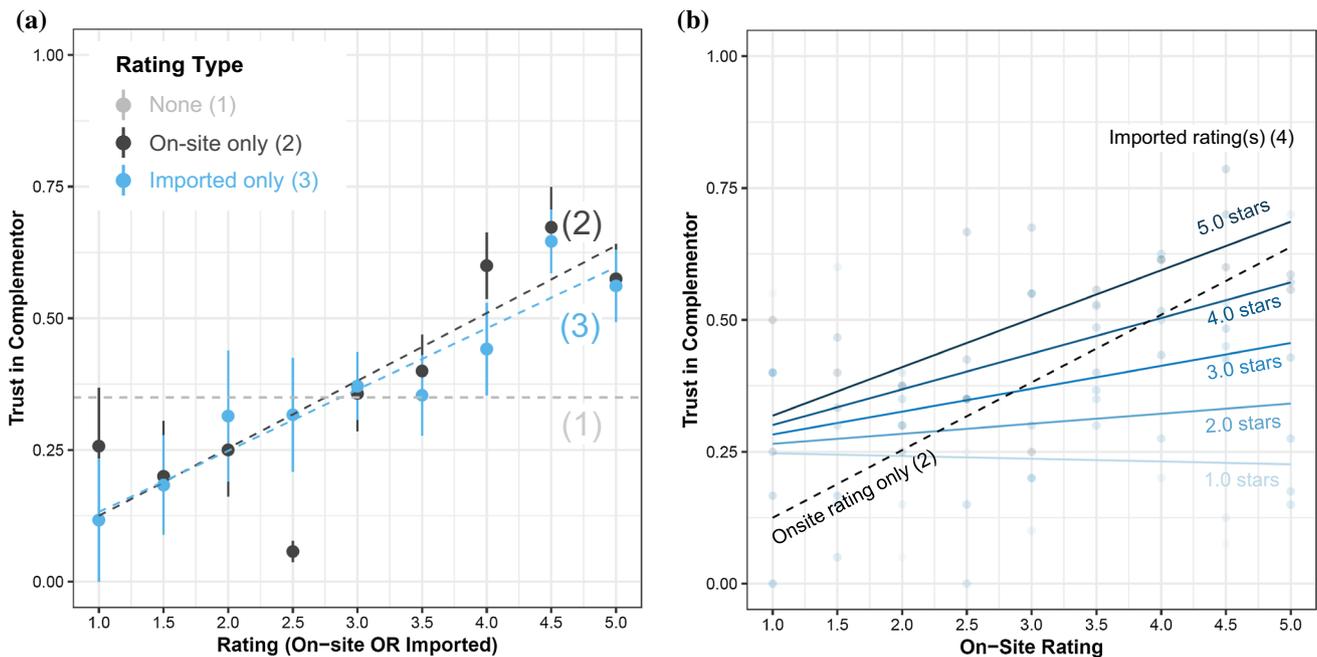


Fig. 1 Consumer trust in complementor by rating score; (a) cases (1), (2), and (3); (b) cases (2) and (4)

site rating exists, complementors benefit from importing any rating score larger than $r^* = \frac{.350 - .016}{.116} \approx 2.9$ stars (i.e., the intersection point of cases (1) and (3) in Fig. 1a). Note that in Fig. 1a, case (1) also intersects case (2) at around 2.75 stars, meaning that it is preferable to not have any rating at all on the entrant platform rather than a “bad” rating.⁵

⁵ Of course, these values can only have indicative character and hence their interpretation requires caution. Complementors will need to carefully consider the characteristics and rating distributions on the respective platforms. To provide an empirical basis for our reasoning, we collected additional data on users’ general perceptions about rating score distributions across a variety of platforms (Appendix D). The data show that users perceive rating distributions quite similarly across platforms (average correlation $\bar{r} = .928$). This perceived similarity supports our reasoning in the sense that a rating on platform A does not mean something completely different than a similar rating on platform B.

Result 1 *In the absence of an on-site rating, consumers’ trust in complementors is driven by increasing values of the imported rating (r_i). However, importing a rating will only be beneficial if its value is sufficiently high. Otherwise, it will be detrimental for the complementor.*

5.2 Interplay of On-site and Imported Reputation (H_2)

Second, when both on-site and imported ratings are available (i.e., case 4), these two signals interact ($\delta_4 = 0.024$, $p < 0.01$) in that the trust effect of on-site ratings increases with better imported ratings – and vice versa. Figure 1b shows this relation for different values of imported star ratings. Based on this, we can estimate the import threshold as a function of the on-site rating r_e , yielding $r^{**} = \frac{-.263 + .157r_e}{-.006 + .024r_e}$. This function is shown in Fig. 2a and

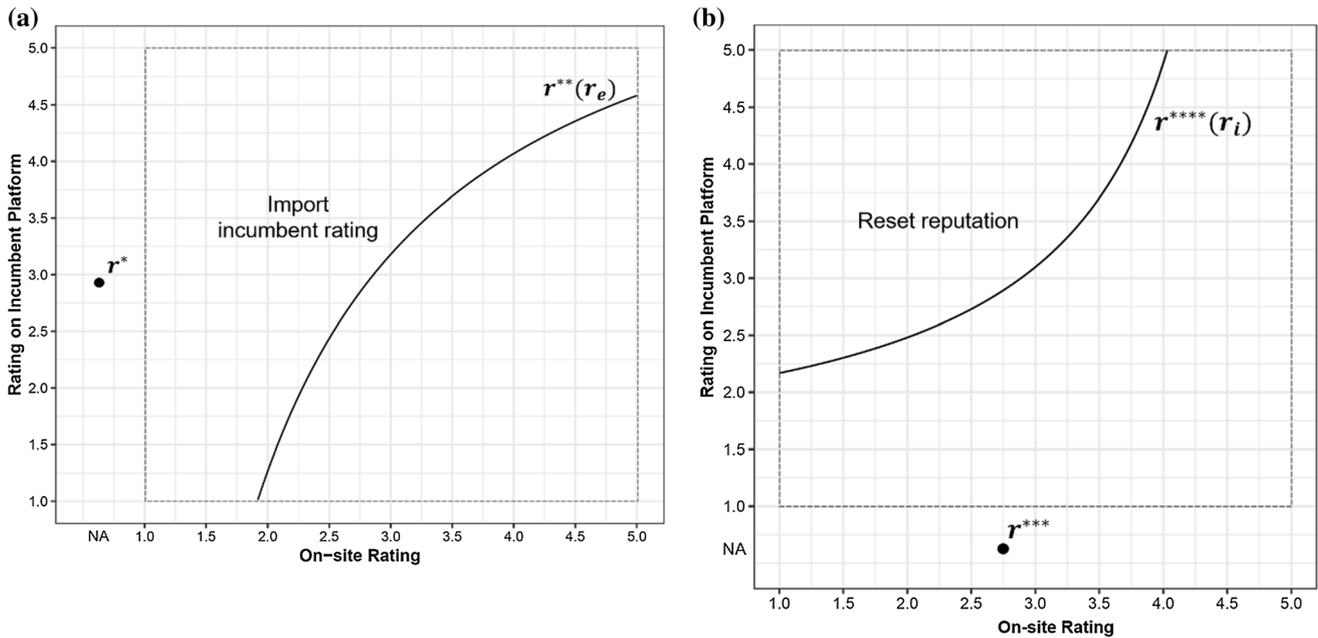


Fig. 2 **a** Estimated import threshold; **b** Estimated reputation resetting threshold. These thresholds have to be taken with caution as they depend on factors such as the employed sample, the ratings’ scales, as well as consumers’ perceptions of the rating distributions on the respective platforms

illustrates the complementor’s decision boundary for whether or not to import a rating (r_i ; y-axis) from the incumbent platform in case they have to weigh it against an existing on-site rating (r_e ; x-axis).

Result 2 *When an on-site rating is available, the decision threshold for importing a rating depends on the on-site rating’s value. This relation is positive and concave.*

Figure 2a demonstrates some of the intricacies of the complementor’s situation. First, the ratings are neither additive nor (perfect) substitutes. One rating’s effect depends on the other rating’s availability and its value – and vice versa. This implies, for instance, that complementors may find it advantageous to import a 3.5 or 4.0 star rating when starting on a new platform (on which they have not gathered any reputation yet). However, the very same imported rating can become a burden once they have obtained sufficiently high on-site ratings.

5.3 Reputation Resetting

Another way to look at the outlined scenario is to consider “reputation resetting”, that is, resetting the complementor’s track record on the entrant platform. Complementors with sub-standard reviews may decide to give up their entrant platform account and create a new one. If no option for importing a rating from an incumbent platform is available, the estimated threshold for considering reputation resetting is equal to the above-mentioned intersection

between cases (1) and (2), i.e., at $r^{***} = \frac{\alpha_1 - \alpha_2}{\beta_2} \approx 2.75$ stars. Hence, if a complementor’s rating drops below this critical value, reputation resetting becomes beneficial. However, if importing a rating is an option, the trigger for resetting will depend on this available (to-be-imported) rating and may be substantially higher. Specifically, a complementor could benefit from abandoning their account if

$$r_e < r^{****}(r_i) = \frac{(\alpha_3 - \alpha_4) + (\gamma_3 - \gamma_4)r_i}{\beta_4 + \delta_4 r_i}, \quad (4)$$

Figure 2b depicts this relationship, indicating the rating combinations for which reputation resetting becomes viable based on our data. As can be seen in Fig. 2b, when the best possible incumbent rating is available, resetting becomes viable for any on-site rating below (as high as) 4.0 stars. Enabling reputation import may thus (inadvertently) promote resetting strategies as the “drop height” for complementors become smaller. This may, in turn, create new issues and necessitate additional, preventive measures on the part of platform operators and policy makers. We provide an overview of all combinations of reputation import and reputation resetting in Appendix E.

5.4 Control Variable Analysis and Robustness Checks

Extending scenario (4) in Table 1 by control variables shows that even though trust in the incumbent platform ($\beta = .014$; $p < .05$), general disposition to trust ($\beta = 0.029$; $p < 0.001$), risk-affinity ($\beta = 0.031$; $p < 0.001$), and online

shopping experience ($\beta = -0.007$; $p > .05$) have significant trust effects, the main coefficients are not substantially affected (the same holds for the other scenarios; Appendix F). Further, we conducted robustness checks for the interaction of *star rating score* and *number of reviews* received, as the latter may strengthen the effects of good/bad rating scores (positivity/negativity effects; Khare et al. 2011) and previous research suggested a positive relation between number of reviews and trust (Cabral and Hortaçsu 2010; Qiu et al. 2018). However, neither the number of reviews nor their log-transformed values had significant effects (Appendix F). As an additional supplementary analysis, we investigated potential *gender effects*. In particular, we analyzed how evaluations of trust were affected when, both host and potential guest had the same gender or when a female guest was presented with a male host profile. None of these variables had any significant effect (Appendix F). As a further check to account for the different sample sizes across the treatment cells in case (4) ($\{1.0, 1.5, \dots, 5.0\} \times \{1.0, 1.5, \dots, 5.0\}$), we repeated the analysis using the data on an aggregated cell-level. This also indicated robustness.

6 Discussion

The increasing market power of platforms has led to a rediscovery of the idea of reputation portability (European Commission 2017). Given the fact that a majority of users are active across multiple platforms (Teubner et al. 2019), we expect the concept of reputation portability to draw increasing attention – both from commercial and political stakeholders (BMAS 2020; Lambrecht and Heil 2020). With this research note, we seek to contribute to the ongoing debate on the nature and scope of reputation portability within the online platform economy. While this concept has been touted since the early 2000s, it is striking that, thus far, it has experienced only limited proliferation. Furthermore, as of 2021, only few platforms enable the import of ratings. Hence, reputation portability can currently be described, at best, as a niche application. However, given recent political advances for strengthening user rights and data portability (including reputational data; BMAS 2020), and the all-pervasiveness of platforms across many industries (Alt and Zimmermann 2014; De Reuver et al. 2018; Sundararajan 2016), we provide insights into the prospective implications of reputation portability for complementors, incumbents, and entrant platforms. After all, stipulations on cross-platform reputation should consider how complementors may actually use the functionality.

6.1 Theoretical Implications

Based on consumer evaluations of complementors' trustworthiness, our study considered the trust-building capabilities of importing an external rating. In line with nascent work on cross-platform signaling (Otto et al. 2018; Teubner et al. 2020), our results show that, overall, imported reputation operates similarly to on-site reputation in that higher imported ratings yield higher levels of trust (H_1). At first glance, this might not seem particularly surprising. However, it is important to note that, thus far, academic research has only investigated the influence of high imported ratings without considering the role of different rating levels (Otto et al. 2018; Teubner et al. 2020). Hence, the required quality of imported reputation for an impact on trust had not been evident. We find that in the absence of an on-site rating, an imported rating operates as a facilitator of trust but that it can also be detrimental if its score is too low.

Moreover, our findings show that an interaction between complementors' on-site and imported rating on trust occurs (H_2). This is an important extension on the literature on cross-platform signaling, as previous studies on reputation imports have considered only scenarios without on-site ratings (Otto et al. 2018; Teubner et al. 2020). As can be seen in the interaction of ratings (Fig. 2), an imported rating can have a positive or a negative impact on complementors' trustworthiness depending on the existence (and value) of an on-site rating. Hence, we demonstrate that there are limits to the positive effects of reputation import and that, depending on the specific scores, different trust-maximizing plans of action emerge. In other words, a complementor's decision of whether or not to employ the additional signal by importing a rating needs to be considered in view of both ratings' values.

6.2 Practical Implications

Our study also has several implications for users, platforms, and regulators. It is often argued that consumers and/or complementors could benefit from reputation portability. The European Commission (2018), for instance, highlights explicitly that users would appreciate cross-platform access to data such as ratings and reviews. As of today, however, complementors face a cold-start problem when beginning to operate on a new platform (Kokkodis and Ipeirotis 2016; Wessel et al. 2017). Therefore, being stuck at zero ratings is a critical issue, especially for complementors considering multi-homing (Dellarocas et al. 2009). Further, prior research suggests that it is difficult for new complementors who have just joined a new platform to collect good ratings. These new complementors often find themselves competing with more

established complementors who have already built a track record (Gutt and Herrmann 2015; Resnick et al. 2006). Our findings show that these complementors can benefit from importing reputation by increasing their trustworthiness in the eyes of prospective consumers. Even for established complementors (i.e., those who already have an on-site rating at their disposal), higher trustworthiness enables them to attract more demand and/or realize price premiums (Tadelis 2016). Hence, reputation portability addresses a relevant issue and can benefit complementors both in early stages and in the long run. For complementors, our findings provide guidance when making deciding about whether or not to import reputation.

Reputation portability is a two-way street; research must distinguish between the two directions. From a strategic perspective, neither incumbent nor entrant platforms have an incentive to offer the *export* of their (users') data. This data represents a competitive lever for incumbent platforms due to data network effects; incumbents may thus not be willing to cede this strategic advantage (Gregory et al. 2020; Tucker 2019). On the contrary, it is to be expected that they will (actively) inhibit the exploitation of their users' reputation outside the platform (Krämer 2018).⁶ Due to the market power of platforms such as Airbnb and Uber – and given that their reputation is constrained to these platforms, complementors effectively find themselves locked-in. This, in turn, represents an entry barrier for new (i.e., entrant) platforms (Gans 2018; Van Alstyne et al. 2016a). However, in order to innovate and benefit from additional activity on their platform, incumbents need to consider the trade-offs between seclusion and openness (Parker and Van Alstyne 2018). In this sense, portable reputation could affect the interplay of complementors, incumbents, and entrant platforms – mitigating lock-in, facilitating multi-homing, and increasing platform competition. From a consumer protection perspective, stipulating the right to reputation portability (a path that first governments have proposed to follow), hence appears consequential.

While platforms remain hesitant to enable users to *export* their reputational data, a different picture emerges for reputation *imports*. In fact, as highlighted above, examples for reputation imports do exist: the e-commerce platforms TrueGether.com and Bonanza.com allow sellers to import ratings and reviews from eBay and Amazon (Bonanza 2019; TrueGether 2019). For regulators, our study thus provides further evidence that reputation portability can have a positive impact on trust in online environments and that there is a rationale for complementors to make use of their pre-existing ratings from other platforms.

However, unintended consequences of enabling reputation portability may also arise. For instance, as we have shown, allowing for rating imports may facilitate strategies of *reputation resetting* – which could potentially be employed by complementors, repeatedly abandoning accounts to exploit consumers. Moreover, as market power of already dominant complementors would extend beyond their home turf to hitherto “unconnected” niche markets, demand concentration may further increase. In addition, it is well-conceivable that reputation imports would be selective to some extent and that such “cherry-picking” could lead to a further rating inflation. Moreover, it is conceivable that reputation portability may exacerbate rather than mitigate the cold-start problem, as well-established complementors will be able to take along their reputation as well – making it even harder to compete against them, even on newer or smaller platforms. Finally, *fake reviews* may propagate faster and wider under reputation portability, undermining the reliability of (and hence trust in) platforms and reputation systems as a whole. It would be a challenge for platforms and policy makers to anticipate such non-intended side effects of reputation portability. Potential means to mitigate such issues could be platform governance and control mechanisms (e.g., allowing for imports only from a set of carefully curated source platforms).

6.3 Limitations and Future Work

Naturally, the present study has limitations. First, the outlined scenario remains somewhat hypothetical as only few platforms actually allow for reputation imports. Nevertheless, research on the subject is needed in order to establish a foundation of knowledge which complementors, platforms, and regulatory authorities can build upon – especially in view of the repeated calls for reputation portability by political bodies (BMAS 2020; European Commission 2016, 2017, 2018). Moreover, our study can only offer a limited view into the complexity of actual platform interactions. The stylized experimental design is limited in providing a basic stimulus – stripped of other design elements typically encountered in the field (e.g., profile photos, self-descriptions; Dann et al. 2020; Teubner et al. 2021). While this setting provides a suitable test bed to study the anticipated relation of (imported) reputation and trust, actual behavior will likely be influenced by additional factors not accounted for in this research.

Next, the thresholds estimated in this study need to be considered with caution. In this sense, neither are these thresholds immediately generalizable to other platforms nor do we suggest using the estimates as the basis for mechanistic decisions by complementors. The estimated import thresholds emerge as an illustrative example of the

⁶ Note that Airbnb, however, does offer the aforementioned code snippet which, in a way, can be seen (and used) as an export function.

boundary conditions for complementors' import decisions. As noted earlier, the specific boundaries need to take into consideration the circumstances and rating distributions of the respective platforms. Future work may study how the effectiveness of imported ratings differs for different platforms, rating distributions, and consumer perceptions thereof.

Additionally, we did not find conclusive evidence for the role of the *number* of ratings for trust-building. While prior research has suggested a positive relation between the number of ratings and trust, it is important that these findings were constrained to good/excellent ratings only (Cabral and Hortaçsu 2010; Qiu et al. 2018). By contrast, our study deliberately employs a balanced design in which the entire scale from 1.0 to 5.0 stars is used, that is, also including the lowest possible rating scores. For such low scores, a higher rating count may have negative trust effects. While our data does not allow for clear-cut conclusions on this interaction (see Table F2 in Appendix F), future work may want to explore these relations in greater detail.

Further, we considered reputation portability within the same domain (i.e., accommodation sharing) and drew on a leading platform as a source (i.e., Airbnb). Previous research has demonstrated that imported reputation is less effective when source and target domains differ or when the source platform is less reputable (Teubner et al. 2020). Finally, we only considered numerical ratings. Previous research, however, has demonstrated a strong impact of (positive) text reviews for economic and social value expectations on platforms when compared to other trust-building artifacts (Abramova et al. 2017; Dann et al. 2020). Hence, future research should investigate which forms of online reputation are particularly helpful for promoting trust across platform boundaries.

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References

- Abramova O, Krasnova H, Tan C-W (2017) How much will you pay? Understanding the value of information cues in the sharing economy. In: ECIS 2017 proceedings, pp 1–18
- Alt R, Zimmermann H-D (2014) Editorial 24/3: electronic markets and general research. *Electron Mark* 24:161–164. <https://doi.org/10.1007/s12525-014-0163-9>
- BMAS (2020) So schaffen wir die soziale digitale Marktwirtschaft. <https://www.bmas.de/DE/Service/Presse/Reden/Hubertus-Heil/2020/2020-11-19-namensartikel-plattformoekonomie.html>. Accessed 12 Jan 2021
- Bonanza (2019) All about the eBay feedback importer. <https://support.bonanza.com/hc/en-us/articles/360001150432-All-About-the-eBay-Feedback-Importer>. Accessed 12 Dec 2020
- Botsman R (2012) Welcome to the new reputation economy. <http://www.wired.co.uk/article/welcome-to-the-new-reputation-economy>. Accessed 19 Feb 2017
- Cabral LL, Hortaçsu A (2010) The dynamics of seller reputation: evidence from eBay. *J Ind Econ* 58:54–78
- Constantinides P, Henfridsson O, Parker GG (2018) Platforms and infrastructures in the digital age. *Inf Syst Res* 29:381–400. <https://doi.org/10.1287/isre.2018.0794>
- Dann D, Teubner T, Adam MTP, Weinhardt C (2020) Where the host is part of the deal: social and economic value in the platform economy. *Electron Commer Res Appl* 40:100923
- de Haan T, Offerman T, Sloof R (2011) Noisy signaling: theory and experiment. *Games Econ Behav* 73:402–428. <https://doi.org/10.1016/j.geb.2011.04.006>
- De Reuver M, Sørensen C, Basole RC (2018) The digital platform: a research agenda. *J Inf Technol* 33:124–135. <https://doi.org/10.1057/s41265-016-0033-3>
- Dellarocas C, Dini F, Spagnolo G (2009) Designing reputation mechanisms. In: Dimitri N, Piga G, Spagnolo G (eds) *Handbook of procurement*. Cambridge University Press, Cambridge, pp 446–482. <https://doi.org/10.1017/cbo9780511492556.019>
- Dohmen T, Falk A, Huffman D, Sunde U, Schupp J, Wagner GG (2011) Individual risk attitudes: measurement, determinants, and behavioral consequences. *J Eur Econ Assoc* 9:522–550
- Dunham B (2011) The role for signaling theory and receiver psychology in marketing. In: Saad G (ed) *Evolutionary psychology in the business sciences*. Springer, Heidelberg, pp 225–256
- European Commission (2018) Study on data in platform-to-business relations. <https://ec.europa.eu/digital-single-market/en/news/study-data-platform-business-relations>. <https://doi.org/10.2873/602765>
- European Commission (2017) Exploratory study of consumer issues in online peer-to-peer platform markets. https://ec.europa.eu/newsroom/just/item-detail.cfm?item_id=77704
- European Commission (2016) The future of the EU collaborative economy – using scenarios to explore future implications for employment. <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/future-eu-collaborative-economy-using-scenarios-explore-future-implications-employment>. <https://doi.org/10.2760/354417>
- Gans J (2018) Enhancing competition with data and identity portability. *Hamilt Proj* 1–28
- Gefen D (2002) Reflections on the dimensions of trust and trustworthiness among online consumers. *ACM SIGMIS Database* 33:38–53

- Gefen D (2000) E-commerce: the role of familiarity and trust. *Omega* 28:725–737
- Gregory RW, Henfridsson O, Kaganer E, Kyriakou H (2020) The role of artificial intelligence and data network effects for creating user value. *Acad Manag Rev*, in Press. <https://doi.org/10.5465/amr.2019.0178>
- Gutt D, Herrmann P (2015) Sharing means caring? Hosts' price reaction to rating visibility. In: ECIS 2015 proceedings, pp 1–13
- Hein A, Schrieck M, Riasanow T, Setzke DS, Wiesche M, Böhm M, Krömer H (2020) Digital platform ecosystems. *Electron Mark* 30:87–98. <https://doi.org/10.1007/s12525-019-00377-4>
- Hesse M, Teubner T (2020) Reputation portability – quo vadis? *Electron Mark* 30:331–349. <https://doi.org/10.1007/s12525-019-00367-6>
- Khare A, Labrecque LI, Asare AK (2011) The assimilative and contrastive effects of word-of-mouth volume: an experimental examination of online consumer ratings. *J Retail* 87:111–126. <https://doi.org/10.1016/j.jretai.2011.01.005>
- Kokkodis M, Ipeiritos PG (2016) Reputation transferability in online labor markets. *Manag Sci* 62:1687–1706
- Krämer J (2018) Datenschutz 2.0 – Ökonomische Auswirkungen von Datenportabilität im Zeitalter des Datenkapitalismus. In: Kretschmer T et al (eds) *Datenkapitalismus – Eine Ökonomische Betrachtung*. Wirtschaftsdienst, pp 459–480. <https://doi.org/10.1007/s10273-018-2318-3>
- Lambrecht C, Heil H (2020) Digitalpolitik: Sollten Digitalplattformen stärker reguliert werden? *WirtschaftsWoche*. <https://www.wiwo.de/politik/deutschland/digitalpolitik-so-schaffen-wir-die-soziale-digitale-marktwirtschaft/26637328.html>. Accessed 15 Jan 2021
- Mavlanova T, Benbunan-Fich R, Koufaris M (2012) Signaling theory and information asymmetry in online commerce. *Inf Manag* 49:240–247
- Otto L, Angerer P, Zimmermann S (2018) Incorporating external trust signals on service sharing platforms. In: ECIS 2018 proceedings, pp 1–17
- Palan S, Schitter C (2018) Prolific.ac – a subject pool for online experiments. *J Behav Exp Financ* 17:22–27
- Parker G, Van Alstyne M (2018) Innovation, openness, and platform control. *Manag Sci* 64:3015–3032
- Peer E, Brandimarte L, Samat S, Acquisti A (2017) Beyond the Turk: alternative platforms for crowdsourcing behavioral research. *J Exp Soc Psychol* 70:153–163. <https://doi.org/10.1016/j.jesp.2017.01.006>
- Puschmann T, Alt R (2016) Sharing economy. *Bus Inf Syst Eng* 58:93–99
- Qiu W, Parigi P, Abrahao B (2018) More stars or more reviews? Differential effects of reputation on trust in the sharing economy. In: CHI 2018 proceedings, pp 1–11
- Resnick P, Kuwabara K, Zeckhauser R, Friedman E (2000) Reputation systems. *Commun ACM* 43:45–48
- Resnick P, Zeckhauser R, Swanson J, Lockwood K (2006) The value of reputation on eBay: a controlled experiment. *Exp Econ* 9:79–101
- Schoenmueller V, Netzer O, Stahl F (2018) The extreme distribution of online reviews: prevalence, drivers and implications. *SSRN Electron J*. <https://doi.org/10.2139/ssrn.3100217>
- Spence M (1973) Job market signaling. *Q J Econ* 87:355–374
- Sundararajan A (2016) *The sharing economy: the end of employment and the rise of crowd-based capitalism*. MIT Press, Cambridge
- Tadelis S (2016) Reputation and feedback systems in online platform markets. *Annu Rev Econom* 8:321–340
- Teubner T, Adam MTP, Camacho S, Hassanein K (2021) What you see is what you g(u)e(s)t: how profile photos and profile information drive providers' expectations of social reward in co-usage sharing. *Inf Syst Manag* (in Press). <https://doi.org/10.1080/10580530.2020.1871533>
- Teubner T, Adam MTP, Hawlitschek F (2020) Unlocking online reputation: on the effectiveness of cross-platform signaling in the sharing economy. *Bus Inf Syst Eng* 62:501–513. <https://doi.org/10.1007/s12599-019-00620-4>
- Teubner T, Hawlitschek F, Adam MTP (2019) Reputation transfer. *Bus Inf Syst Eng* 61:229–235
- TrueGether (2019) TrueGether: about us. <https://www.truegether.com/aboutus.html>. Accessed 12 Dec 2020
- Tucker C (2019) Digital data, platforms and the usual [antitrust] suspects: network effects, switching costs, essential facility. *Rev Ind Organ* 54:683–694
- Van Alstyne M, Parker G, Choudary SP (2016a) Pipelines, platforms, and the new rules of strategy. *Harv Bus Rev* 94:54–63
- Van Alstyne M, Parker GG, Choudary SP (2016b) 6 reasons platforms fail. *Harv Bus Rev* 31:2–6
- Wessel M, Thies F, Benlian A (2017) Competitive positioning of complementors on digital platforms: evidence from the sharing economy. *ICIS 2017 proceedings*, pp 1–18