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Examining antecedents of customer pay-what-you-want payments in e-commerce

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Abstract

Purpose—E-commerce is flourishing globally, with more and more organizations developing e-commerce applications and opting for pay-what-you-want (PWYW) as an innovative pricing strategy. Although customers behave differently online (compared to offline) and commonly buy tangible products in this context, prior research on PWYW mainly focused either on offline settings or on the distribution of digital music content (i.e., an intangible product). Therefore, the purpose of this paper is to examine, drawing on signaling theory, the effects of three signaling cues on customer PWYW online payments for tangible products and the mediating effect of trust and risk perceptions.

Design/methodology/approach—Two-hundred fifty-five adult consumers participated in a 2 (virtual product experience versus no virtual product experience) × 2 (warranty versus no warranty) × 2 (product review versus no product review) between-subjects experiment.

Findings—The results indicate that offering a product warranty, an online user review, and, to a greater extent, a virtual product experience positively influence customer PWYW online payments for a tangible product. Furthermore, all three signals influence the price that customers want to pay because of enhanced trust regarding the e-vendor rather than reduced risks.

Practical implications—The findings provide e-commerce managers with relevant insights to refine their digital strategy, influence customer online trust, and ultimately benefit from PWYW.

Originality—This research contributes to the literature with an extension of current PWYW research by examining the antecedents of customer PWYW payments for *tangible* products in an *online* setting.

Keywords—Pay-what-you-want, participative pricing, innovative pricing, e-commerce, risk, trust, signaling theory

1. Introduction

E-commerce is flourishing globally, with more and more organizations developing e-commerce applications, and customers increasingly buying products and services online (Laudon and Traver, 2016). Customers' attitudes and behaviors differ in e-commerce compared to offline commerce contexts (Shankar *et al*., 2003). For example, customers' price sensitivity is generally higher online than offline (de Figueiredo, 2000; Degeratu *et al*., 2000; Lynch and Ariely, 2000). As a matter of fact, determining the right price for a product is one of the major decisions e-commerce managers have to make (Clemons *et al*., 2002). E-commerce vendors typically use dynamic pricing models, which allow the seller to determine the price based on current market demands (Boyd and Bilegan, 2003; Kannan and Kopalle, 2001). In recent years, however, several e-commerce vendors adopted pay-what-you-want (PWYW) pricing as an alternative (participative) and innovative pricing strategy. As the term suggests, customers can choose what they want to pay for a particular product or service, including zero (Kim *et al*., 2009).

PWYW pricing attracted significant attention from researchers in recent years. Yet, the bulk of the current body of knowledge relates mainly to offline settings. Kim *et al*. (2009) examined the effectiveness of PWYW pricing in a restaurant, movie theater, and a café. Their findings show that, overall, variables related to the quality of the interaction (i.e., fairness, satisfaction) determine individual customers' PWYW payments. Kunter (2015) further identifies avoiding feelings of guilt as an additional driver of these payments. Customers also pay more if other customers are around them as they want to portray a positive image of themselves (Greiff and Egbert, 2017). Research on PWYW in an e-commerce setting remains relatively scarce, despite the observation that factors driving customer PWYW payments in an offline setting (e.g., quality of physical interaction) are not always relevant to the e-commerce context. Moreover, the few studies on PWYW in an online setting mainly focus on the distribution of digital music content (El Harbi *et al*., 2014; Regner and Barria, 2009), whereas most e-commerce models involve the offering and distribution of tangible goods for which experiential information is particularly important and yet lacking (Laudon and Traver, 2016).

To the best of our knowledge, only Weisstein *et al*. (2016) examine drivers of customer PWYW payments for tangible products in an e-commerce setting. Their findings show that PWYW payments are driven by familiarity with the product's brand, perceived product knowledge, and perceived product quality. While Weisstein *et al*. (2016) provide a valuable contribution to the literature by focusing on how *product* characteristics influence PWYW

payments, we contend that the focus on product characteristics only may be too narrow in scope to fully understand customer PWYW payments in an online setting. Often relying on signaling theory as a theoretical anchor, several studies show that customer decision-making in an e-commerce environment is typically driven by *e-commerce vendor* characteristics rather than particular *product* characteristics (e.g., Darley *et al*., 2010; Wells *et al*., 2011).

This paper addresses the identified issues and contributes to the literature in two principal ways. First, we draw on signaling theory (Spence, 1974) to examine the effects of three commonly used signaling cues in an e-commerce setting (i.e., a virtual product experience, a warranty, and a review from another customer) on customer PWYW online payments for tangible products. With this effort, we extend prior PWYW research and specifically complement Weisstein *et al*.'s (2016) findings by examining the direct and indirect effects of three distinct *vendor*-related characteristics, rather than *product*-related characteristics, on customer PWYW online payments. Second, prior research shows that customer behavior in an e-commerce setting is mainly driven by trust and risk perceptions (e.g., Kim *et al*., 2008). E-commerce involves uncertainty about the e-commerce vendor's reliability and performance due to a spatial, social, and temporal separation of customers and e-commerce sellers (Pavlou, 2003). This paper examines whether and how trust and risk perceptions mediate the relationships between the three signaling cues under investigation and customer PWYW payments. In doing so, this study extends prior research on PWYW, which is scant on concepts of trust (León *et al*., 2012) and risk perceptions, despite their importance and relevance in an online setting. Weisstein *et al*. (2016) show the effects of brand familiarity on customer PWYW payments are mediated by perceived product knowledge and perceived quality. This study further complements this recent work by examining whether trust and risk perceptions also matter in driving customer PWYW online payments.

2. Theoretical background and hypotheses development

2.1. Pay-What-You-Want pricing

PWYW pricing is an innovative pricing system that delegates price decision authority to the customer. In essence, a customer can set any price above or equal to zero, and the seller cannot reject it (Kim *et al*., 2009). Against any intuition, PWYW appears to be effective. For instance, Kim *et al*. (2009) show that organizations, on average, can increase their revenues by adopting a PWYW pricing strategy. In a similar vein, Riener and Traxler (2012) find that

adopting a PWYW pricing system leads to a significant increase in revenues, even after two years. Prior research identifies various drivers of individual customers' PWYW payments. For example, Roy *et al*. (2016) as well as Kunter (2015) show that an external reference price (absent versus present), social visibility (private versus public), and purchase motivation (intrinsic versus extrinsic versus altruistic) influence customers' pricing decision in a PWYW context. Furthermore, the quality of the interaction with the service employee is a crucial antecedent of customers' PWYW payments in offline settings (Kim *et al*., 2009).

To date, research on PWYW has mainly developed in a variety of *offline* contexts, including restaurants, movie theaters, cafés, and entertainment parks, among others (Gneezy *et al*., 2010; Kim *et al*., 2009; Mak *et al*., 2015). Studies examining PWYW in an *online* environment remain scarce. This is surprising given that the most-cited PWYW example involves an e-commerce setting. In 2007, the band Radiohead released their album *In Rainbows* online and told fans to pay what they want when downloading the digital album. Radiohead later acknowledged that PWYW was more profitable than a traditional release would have been (Kreps, 2008). Following this success, El Harbi *et al*. (2014) even propose applying PWYW could be an effective means to counter online music piracy.

Although there is a growing number of firms selling tangible goods and applying a PWYW online strategy, empirical research on the antecedents of customer PWYW online payments is mainly limited to the digital music industry (e.g., Regner and Barria, 2009). Given the lack of experiential information related to online purchase of tangible products, customers are likely to search for cues or signals to assess the quality and reliability of the e-commerce vendor (Wells *et al*., 2011). Drawing on signaling theory (Spence, 1974), this research argues that e-commerce vendors providing customers with specific cues, namely a virtual product experience, a warranty, and a customer review, could positively influence customer PWYW online payments for tangible goods.

2.2. The role of signaling cues in an e-commerce environment

Signaling theory (Spence, 1974) provides a theoretical framework on how signals can be used to reduce information asymmetry and facilitate customer purchase decisions in online settings. Signals, or cues, are indeed especially important in online contexts (Biswas and Biswas, 2004). The seller-buyer exchanges in an e-commerce environment are typically characterized by high information asymmetry. That is, an e-vendor typically possesses more knowledge about its performance and reliability compared to prospective customers

(Mavlanova *et al*., 2016). Moreover, online customers have more difficulties to evaluate the product quality prior to the purchase given their limited possibility to 'experience' the product before purchase (Forsythe and Shi, 2003). The lack of significant cues such as the store location and layout, the presence and profiles of other customers as well as the service level of employees, among others, further create uncertainty among customers in online settings (Biswas and Biswas, 2004). These observations together indicate the importance of conveying signals in e-commerce environments, as customers would use these limited available cues to make inferences about the product quality and make purchase decisions.

E-vendors may use internal and external signals as part of their digital business strategy to reduce information asymmetry. In doing so, vendors would provide customers with cues about quality and enhance customers' price estimates (Mavlanova *et al*., 2016). This study taps into three unique signals that can be used in an e-commerce environment. First, a virtual product experience can be considered as a good internal signal to project a specific image towards the customer (Dimoka *et al*., 2012). Customers cannot touch, see, or physically interact with the product in online settings. Therefore, more and more organizations (e.g., Ikea.com) offer customers the opportunity to have a virtual product experience. A virtual product experience allows customers to visualize (and even hear) how the product is used and how the internal mechanisms work. Compared to traditional static product pictures, virtual product experiences appear more effective in providing accurate information and reducing uncertainty (Park *et al*., 2005). Moreover, evidence suggests that a virtual product experience positively influences customer outcomes such as product evaluation and purchase intentions (Jiang and Benbasat, 2007; Weisstein *et al*., 2016). Given the strong positive relationship between customers' intent to purchase and the actual amount paid by customers in participative pricing (Chandran and Morwitz, 2005; Kim *et al*., 2009), more formally:

H1: A virtual product experience increases customer PWYW payments for tangible products in an online setting.

Second, companies can also use warranties as internal signals (Boulding and Kirmani, 1993). When offering warranties, firms offer customers the possibility to return a purchased product, free of charge. Product warranties are especially relevant in online settings as it is impossible for customers to experience the product before purchase (Mavlanova *et al*., 2016). A credible warranty serves as a quality cue, signaling customers that the company is willing to reduce customer perceived uncertainty caused by information asymmetry (Balachander, 2001). Reducing uncertainty through the use of warranties is known to have a positive influence on

customer purchase behavior (Adjei *et al*., 2010). For instance, Boulding and Kirmarni (1993) show product warranties help decrease information asymmetry and, in return, increase customer purchase intention in offline settings. Extending this rationale to PWYW online payments, it is likely that customers will pay more (less) for a product when a warranty is (not) offered by the e-commerce vendor:

H2: A warranty increases customer PWYW payments for tangible products in an online setting.

Third, online reviews have become a popular source of information for customers who wish to evaluate and purchase products on e-commerce websites (Ketelaar *et al*., 2015). Next to virtual product experience and warranties, e-vendors can decrease information asymmetry by displaying customers' online reviews of their products (Godes and Mayzlin, 2009). Displaying customer reviews signals the company's faith in its products. Online reviews can have a powerful, influencing role on customers' decisions (Chen and Xie, 2008). As opposed to offline settings, the online customer can easily read reviews, know others' opinions, and even receive recommendations from other customers with similar tastes and preferences (Srinivasan *et al*., 2002). Because online reviews convey relevant information that help customers make inferences regarding the quality of the product, prior research shows that reviews—in general—positively affect firms' sales as well as customer purchase behaviors (e.g., Chevalier and Mayzlin, 2006; Park *et al*., 2007; Zhu and Zhang, 2010). We therefore hypothesize:

H3: A product review increases customer PWYW payments for tangible products in an online setting.

2.3. The mediating role of risk and trust

Because customers disproportionally evaluate losses under uncertainty (Kahneman and Tversky, 1979), perceived risk is considered as a central factor to customers' evaluations, choices, and behaviors (Campbell and Goodstein, 2001). Perceived risks traditionally increase with higher levels of uncertainty and/or a higher probability of negative consequences. Risks are context-dependent, so they not only depend on the product or service characteristics, but also on *how* products and services are acquired (Conchar *et al*., 2004). For instance, prior research shows that customers perceive online shopping as riskier compared to traditional in-store shopping (e.g., Donthu and Garcia, 1999; Pavlou, 2003). Online shopping environments limit the experiential information that customers can get, which in turn increases their risk

perceptions (Park *et al*., 2005). Because of this information asymmetry, online shoppers may perceive several risks including risks of privacy violation, credit card misuse, time loss, or product misperformance (Forsythe and Shi, 2003).

Bearing in mind that risks are customers' foremost concern in decision-making (Conchar *et al*., 2004), e-commerce managers must address customers' overall perceptions of risks and adverse consequences associated with online purchase. As previously mentioned, signaling theory (Spence, 1974) proposes firms can reduce information asymmetry through the appropriate use of signals. For instance, product warranties and virtual product experience are considered as effective signaling cues to reduce customers' perceptions of risks (Boulding and Kirmani, 1993; Park *et al*., 2005). In a similar vein, Wu *et al*. (2013) find that customers read online reviews to assess and reduce the probability of negative consequences, which ultimately increases their purchase behaviors. On the basis of this discussion, we expect online signaling cues (in this study: virtual product experience, product warranty, and product reviews) to influence customers' PWYW online payments through a decrease in their risk perceptions. More formally, we hypothesize the following:

H4a: Perceived risk mediates the effect of a virtual product experience on customer PWYW payments for tangible products in an online setting.

H4b: Perceived risk mediates the effect of a warranty on customer PWYW payments for tangible products in an online setting.

H4c: Perceived risk mediates the effect of a review on customer PWYW payments for tangible products in an online setting.

Next to reducing customers' risk perceptions, e-commerce managers also need to develop customer trust in order to succeed and build long-term relationships with customers (Bart *et al*., 2002). Trust in the vendor essentially captures customers' belief that the vendor will act in a socially responsible manner and will not take advantage of the customers' vulnerabilities (Pavlou, 2003). Numerous previous academic studies have emphasized the importance of trust in e-commerce strategy (Kim and Peterson, 2017), and show trust in the e-commerce vendor positively influences customer outcomes such as satisfaction, word-of-mouth, and purchase behaviors (e.g., Bart *et al*., 2005; Belanger *et al*., 2002; Shankar *et al*., 2002; Yoon, 2002). Signaling theory also posits specific cues can serve as quality signals and increase customer trust in e-vendors (e.g., Aiken and Boush, 2006). We thus expect that all three signals used in this study would positively influence customer PWYW online payments through online trust. We hypothesize the following:

H5a: Perceived trust in the e-vendor mediates the effect of a virtual product experience on customer PWYW payments for tangible products in an online setting.

H5b: Perceived trust in the e-vendor mediates the effect of a warranty on customer PWYW payments for tangible products in an online setting.

H5c: Perceived trust in the e-vendor mediates the effect of a review on customer PWYW payments for tangible products in an online setting.

3. Method

3.1. Procedure, manipulation, and measures

Two-hundred fifty-five adult consumers participated in a 2 (virtual product experience versus no virtual product experience) × 2 (warranty versus no warranty) × 2 (product review versus no product review) between-subjects experiment. Similar to Boerman *et al*. (2017), participants were recruited through social media invitations and personal communication. Participants were ranging in age from 17 to 70 years (M = 28.8, SD = 11.3); 50.6% were female, and 65.1% pursued or completed higher education. 66.3% of participants completed an online transaction in the last month spending on average €94.22 (SD = 226.21).

3.2. Manipulations

The respondents first received a short explanation about the PWYW pricing method. The participants were explicitly told that they could choose to pay any amount they wanted for the product, including zero, and that the e-commerce vendor could not refuse their offer. Respondents were then invited to see a print screen of the e-commerce webpage of *Pokito* on which an innovative, eco-friendly cup was available for sale. This cup is considered as an innovative product as it can be adjusted in three sizes and be scrunched up. Moreover, it is a convenience product with low variable costs and high fixed costs, making it an appropriate product for a PWYW pricing strategy (Balan, 2014).

Respondents were randomly assigned to one of the eight experimental conditions (see *Appendix 1* for further details about the stimuli). In the 'no virtual product experience' conditions, the webpage depicted a picture of the reusable cup. The image clearly showed the three different positions the cup can be transformed into. In the 'virtual product experience conditions', respondents had the opportunity to watch a movie showing how a barista serves

coffee and transforms the cup into three different positions depending on the size of the coffee he would like to serve. Next, we manipulated the presence of a warranty. In the 'warranty' conditions, customers were guaranteed a free delivery, a free return, and a full reimbursement if the customer sends back the product at least 30 days after the purchase. In the 'no warranty conditions', customers were only offered a free delivery. Finally, we manipulated the presence of a product review. In the 'product review' conditions, customers received a short text with some positive product features ("Very handy and useful product; I cannot miss this cup anymore!") and a four out of five-star rating. The 'no review' group received a text indicating that there were no reviews available for this product.

3.3. Measures

In line with Weisstein *et al*. (2016), respondents were instructed to purchase a reusable cup on *Pokito*'s e-commerce website. Participants were then asked how much they were willing to pay for the product (in euros), knowing that they could choose any amount above or equal to zero. Next, respondents rated their perceived risk perceptions on a four-item scale adapted from Forsythe and Shi (2003), each item representing a specific dimension of risk (i.e., financial, performance, psychological, and convenience risk). Participants also rated their level of trust in the vendor on a three-item scale adopted from Pappas (2016). Finally, respondents filled in some questions related to their socio-demographic background: age, gender, level of education, occupation, and monthly net income. Respondents were also asked to indicate how many online purchases they made in the last month and how much money they spend on these online purchases.

4. Results

4.1. Scale validity and reliability

Before testing the hypotheses, we assessed the convergent and discriminant validity of the perceived risk and online trust scales used in this study. The confirmatory factor analysis reveals that the chi-square value for the overall model is 61.628 (df = 13, $p < .001$). The other fit indices (Comparative Fit Index [CFI] = 0.97, Tucker-Lewis Index [TLI] = 0.95, Standardized Root Mean Square Residual [SRMR] = 0.046) are all satisfactory. In a next step, we assess convergent validity, reliability, and discriminant validity. The results in *Appendix 2* provide support for the convergent validity of our measures. All standardized factor loadings exceed

the recommend .60 threshold (Bagozzi and Yi, 1988). Both composite reliabilities [CR] exceed the .70 threshold (Perceived risk: .97, Online trust: .93), and both Average Variance Extracted [AVE] indicators exceed the 0.50 threshold (Perceived risk: .97, Online trust: .88), supporting internal validity of the measures (Fornell and Larcker, 1981). Finally, discriminant validity is established if the minimum AVE exceeds the squared correlation between perceived risk and online trust (Fornell and Larcker, 1981). The findings support discriminant validity between both concepts as the minimum AVE (.88) exceeds the squared correlation between perceived risk and online trust (.64). Briefly stated, all psychometric properties are met.

4.2. Hypotheses testing

We tested the hypotheses using a series of regression analyses. *Table I* lists the results. These findings show that without any of the signaling tactics, customers would pay €2.34 for the reusable cup. The average customers' PWYW payment increases with €5.26 when adding a virtual product experience ($p < .001$), €2.05 when providing a warranty ($p < .001$), and €2.44 when adding a review from another customer ($p < .001$). These findings support Hypothesis 1, Hypothesis 2, and Hypothesis 3.

Table I: Linear regression results

	DV: Perceived trust	DV: Perceived risk	DV: PWYW payment	DV: PWYW payment
Independent variables				
Constant	3.39 (0.13) ***	5.42 (0.12) ***	2.34 (0.50) ***	-1.32 (2.29) n.s.
Virtual product experience	1.84 (0.14) ***	-1.70 (0.12) ***	5.26 (0.53) ***	2.62 (0.72) ***
Warranty	0.30 (0.14) *	-.56 (0.12) ***	2.05 (0.52) ***	1.54 (0.52) **
Review	0.36 (0.14) **	-.50 (0.12) ***	2.44 (0.52) ***	1.91 (0.52) ***
Mediators				
Perceived trust	-	-	-	1.31 (0.27) ***
Perceived risk	-	-	-	-.14 (0.30) n.s.
F-value	65.68***	79.94 ***	46.12 ***	37.67 ***
Adjusted R^2	43.3%	48.0%	34.6%	42.1%

Note: *** $p < .001$, ** $p < .01$, * $p < .05$, n.s. not significant.

We also proposed that customer trust in the e-vendor and perceived risk would mediate the relationships between the three signaling tactics and customer PWYW payments for tangible products in an online setting. In *Table I*, we observe that offering a virtual product experience ($b = 1.84$, $p < .001$), a warranty ($b = .30$, $p < .05$), and a review ($b = .36$, $p < .01$) influence consumers' perceived trust in the e-vendor. In a similar vein, offering a virtual product experience ($b = -1.70$, $p < .001$), a warranty ($b = -.56$, $p < .001$), and a review ($b = -.50$, $p <$

.001) reduces consumers' perceived risk. Trust, in turn, influences customer payments (b = 1.31, p < .001). The relationship between risk and customer PWYW payments, however, is not supported (b = -.14, p > .05). Although not hypothesized, we also examined the interaction effects of signaling cues on PWYW payments; the results did not reveal any significant effects (p > .1)

To formally test the hypotheses, we analyzed these indirect effects using Preacher and Hayes' (2008) multiple mediator model. Customer PWYW payment serves as the dependent variable, virtual product experience, warranty, and review serve as the independent variables while perceived trust in the e-vendor and perceived risk serve as the mediators. We estimated the indirect effects using a bootstrapping procedure with 5,000 resamples. An indirect effect is considered significant if the confidence interval around the indirect effect does not include zero. *Table II* lists the results.

Table II: Indirect effects

	Indirect effect via perceived trust		Indirect effect via perceived risk	
Relationships	*b* (S.E.)	95% confidence interval	*b* (S.E.)	95% confidence interval
Virtual product experience → Payment	2.44 (0.53)	(1.52 ; 3.63)	0.24 (0.55)	(-0.98 ; 1.17)
Warranty → Payment	0.39 (0.19)	(0.07 ; 0.85)	0.08 (0.18)	(-0.32 ; 0.40)
Review → Payment	0.48 (0.19)	(0.17 ; 0.95)	0.07 (0.16)	(-0.25 ; 0.39)

Note: Standard errors and confidence intervals were obtained using a bootstrapping procedure with 5,000 resamples

These findings support a mediating role of perceived trust in the relationships between a virtual product experience and a PWYW payment (b = 2.44), a warranty and a PWYW payment (b = 0.39), and a review and a PWYW payment (b = 0.48). These findings support Hypothesis 4a, Hypothesis 4b, and Hypothesis 4c. In contrast, perceived risk does not mediate these relationships as all confidence intervals around the indirect effects contain zero. These findings do not support Hypothesis 5a, Hypothesis 5b, and Hypothesis 5c[1].

5. Discussion

5.1. Theoretical implications

The aim of this paper was to examine the relationships of three commonly used quality signals with customer trust in the e-vendor, perceived risk, and customer PWYW payments for a tangible product in an e-commerce setting. We specifically contribute to the literature in the following ways.

First, previous PWYW research has mainly focused on the drivers of customer payments either in offline settings (e.g., Kim *et al.*, 2009) or in the context of digital music purchase (e.g., El Harbi *et al.*, 2014; Regner and Barria, 2009). Our findings extend this research stream by examining the antecedents of customer PWYW payments for tangible products in an online setting. In particular, this study shows that a virtual product experience is a stronger driver of customer PWYW payments than a warranty or a customer review. Combining our findings with Weisstein *et al.*'s (2016) insights, it appears that a virtual product experience influences customer PWYW payments via two mechanisms. The first mechanism, highlighted in this paper, suggests that a virtual product experience serves as a signaling cue about the e-commerce vendor's trustworthiness and reliability, and has a direct and indirect effect on customer PWYW payments. The second mechanism, highlighted in Weisstein *et al.*'s (2016) paper, suggests that a virtual product experience also leads to better understanding of the product quality, especially for unfamiliar brands. Hence, a virtual product experience influences customer PWYW payments by not only offering a better understanding of the products being sold (Weisstein *et al.*, 2016), but also by signaling the e-commerce vendor's trustworthiness.

While a warranty and a product review have smaller effects on customer PWYW payments than a virtual product experience, these effects are still significant. Independent from each other, a warranty increases customer PWYW payments with on average €2.05, while a customer review increases PWYW payments with on average €2.44. Prior research has devoted significant attention to understanding the benefits and consequences of online customer reviews on one hand (e.g., Park et al., 2007; Purnawirawan et al., 2012), and of warranties on the other hand (e.g., Bonifield *et al.*, 2010; Boulding and Kirmani, 1993). Our findings extend this research stream by highlighting the importance of understanding the effects of multiple signaling cues simultaneously. Moreover, this study suggests more research on the effects of a virtual product experience, next to online customer reviews and warranties, is necessary as it proves to be a more effective quality signal.

Second, this paper offers valuable insights about the processes underlying the effects of the different signaling cues on customer PWYW payments. Our findings show that these relationships are mediated by trust in the e-vendor, but not by perceived risk. These results are surprising given that typically both trust and risk perceptions affect customer behavior and loyalty in an online setting (e.g. Pavlou, 2003), but apparently not for PWYW payments. It is trust that drives customer PWYW payments. Trust essentially captures customers' beliefs that the vendor will act in a socially responsible manner and will not take advantage of the customers' vulnerabilities (Pavlou, 2003). In our study, customers had to indicate how much

they want to pay before the product was delivered. Drawing on the reciprocity principle (Gouldner, 1960), customers may pay a higher amount of money for a product stemming from a trusted vendor as a means to "reward" the vendor for his kindness and honesty.

5.2. Managerial implications

More and more organizations develop e-commerce applications and opt for a PWYW pricing strategy. The empirical results of the present study have important implications for these organizations. This research identifies three easy-to-implement, inexpensive actions that firms could take to increase customer PWYW online payments.

Given the limited experiential information that customers can get when purchasing tangible goods online, providing customers with a virtual product experience (e.g., a video delivering information in both visual and audio terms) rather than a static product image, is an effective way to influence customer PWYW payments. In doing so, e-vendors would offer customers the opportunity to experience the product before purchase, and thereby influence customer purchase behavior. Next to a virtual product experience, e-vendors could also communicate about their delivery and return policies. Our results show guaranteeing a free return and a full reimbursement increases customer PWYW online payments. Moreover, firms can benefit from displaying online reviews as they positively influence customer PWYW payments. Interestingly, although the three signals used in this study increase customer PWYW online payments, our findings suggest providing a virtual product experience is the most effective signal indicating firms could prioritize this specific signal.

Developing online trust is highly recommended for firms to develop and maintain long-term relationships with customers. This study also reveals online trust is a crucial factor in the PWYW process. Our results specifically show the aforementioned signals influence PWYW payments through customers' trust beliefs. Put differently, offering a virtual product experience, a product warranty, and online reviews enhance customer online trust in the e-vendor, and ultimately increase the price customers are willing to pay online for tangible products.

5.3. Limitations and directions for future research

Several limitations of the current study offer opportunities for future research. First, this study uses an online experiment to test the hypotheses. This approach is useful for achieving

high internal validity, but may be somewhat limited with regard to external validity. Future research might use a field experiment to address this limitation. Second, we manipulated the customer review by presenting a review from one customer (versus no review). Future research might consider the effect of presenting multiple reviews. Research suggests that customers process online review sets differently depending on the ratio of positive versus negative reviews as well as the order in which the reviews are presented (Purnawirawan *et al*., 2012). Third, in the current experiment, the customer made his or her PWYW payment before the product was delivered, which creates additional uncertainty about the product performance. Future research might therefore explore whether customer PWYW online payments differ before or after the product was delivered, as more and more companies offer customers a "Pay after delivery" option (e.g., Paypal). Fourth, culture influences how customers behave and make decisions (Hofstede, 1997). Understanding the antecedents of customer PWYW online payments across cultures would provide relevant insights for global managers who wish to implement such an innovative pricing strategy across various regions and countries. Finally, next to a virtual product experience, product warranty, and online customer reviews, future research could examine the effects of other commonly used online quality signals such as trustmarks, objective source ratings, or avatars on customer PWYW online payments.

Notes

1. Only 10% of the sample decided to pay nothing (i.e., 0 euros) for the *Pokito* cup. Re-analyzing the data without this specific group, however, leads to the exact same results as the analyses including this group of respondents who decided to pay nothing at all.

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Appendix 1: Stimuli

[Introductory text, all participants]

As a coffee lover you may stop every morning at a coffee shop to buy a fresh cup of coffee. You decide to purchase your own, reusable cup and end up at the webshop below. The webshop uses the Pay-What-You-Want principle. This means that you can decide how much you want to pay for this cup, including nothing (zero euros). There is no fixed price for this cup and the price you pay should be higher or equal to no payment. The owner of the webshop cannot refuse the price you wish to pay and must accept your offered price anyway. The purchase is therefore always valid.

[Webshop conditions]

1. Movie, warranty and review

2. Movie, warranty and no review

3. Movie, review and no warranty

4. Movie, no warranty and no review

5. Image, warranty and review

6. Image, warranty and no review

7. Image, review and no warranty

8. Image, no warranty and no review

Appendix 2: Overview of dependent measures

Variables	Factor loadings	CR	AVE
Perceived trust		0.97	0.93
The Website vendor I use gives the impression that they are honest	0.94		
The Website vendor I use gives the impression that they care for their users	0.95		
The Website vendor I use gives the impression that they have the ability to fulfill my needs	0.92		
Perceived risk		0.97	0.88
When buying a product like this, I consider the potential risk that I will not receive what I expected *(perceived product performance risk)*	0.72		
Purchasing online would involve taking more time to seek out information when compared with more traditional ways of shopping *(perceived time/convenience loss risk)*	0.82		
Purchasing online involves the risk of credit loss when compared with more traditional ways of shopping *(perceived financial risk)*	0.74		
Purchasing online involves the risk of loss of private information when compared with more traditional ways of shopping *(perceived psychological risk)*	0.89		
Customer PWYW payment			
How much are you willing to pay for this product? Please write down the amount you are willing to pay below (in euro)	-	-	-

Notes: CR = Composite reliability, AVE = Average Variance Extracted. All items were measured on a seven-point Likert scale.

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