



UNIVERSITY OF WARSAW
FACULTY OF ECONOMIC SCIENCES

WORKING PAPERS

No. 14/2017 (243)

THE STRENGTH OF THE ANCHORING EFFECT ON PAY WHAT YOU WANT PAYMENTS: EVIDENCE FROM A VIGNETTE EXPERIMENT

ANNA KUKLA-GRYZ
KATARZYNA ZAGÓRSKA

WARSAW 2017



The strength of the anchoring effect on Pay What You Want payments: Evidence from a vignette experiment

ANNA KUKLA-GRYZ

Faculty of Economic Sciences
University of Warsaw
e-mail: akukla@wne.uw.edu.pl

KATARZYNA ZAGÓRSKA

Faculty of Economic Sciences
University of Warsaw
e-mail: kzagorska@wne.uw.edu.pl

Abstract

The goal of this paper is to empirically investigate, on the example of eBooks, the effects of the expected quality, external and internal reference prices, risk-taking propensity and perceived costs of production on the size of the voluntary payments in pay-what-you-want (PWYW) scheme. Using the results of a vignette experiment, we show that independently from the expected quality of the eBook, when individual internal reference price is higher than external reference price, voluntary payments are significantly higher if external reference price is not provided. When the external reference price is not provided then PWYW payments depend positively on consumers' individual internal reference price, and the perceived percentage of the price believed to cover the author's compensation and the publication costs. The originality of the research comes from separating the anchoring effect of external reference prices from the quality signal effect.

Keywords:

pay-what-you-want, cultural goods, uncertainty, reference price, experience goods

JEL:

D01, D12, Z19, M31

Acknowledgements

This work was supported by the National Science Centre (Poland), grant UMO-2014/14/E/HS4/00389

Working Papers contain preliminary research results.

Please consider this when citing the paper.

Please contact the authors to give comments or to obtain revised version.

Any mistakes and the views expressed herein are solely those of the authors.

1. Introduction

Cultural goods have some characteristics that traditional consumer models may fail to accommodate. Contrary to many other types of goods, the demand in the cultural sector is binary rather than *quasi*-continuous – no consumer buys the same books or movies twice only because of their low prices. Another special feature is the variation in tastes over a lifetime and over the cultural experience: past consumption may develop a perception of quality of cultural goods to be potentially consumed in the future. This may result in high heterogeneity in consumer valuation of cultural goods. Finally, cultural goods are classified as experience goods: individuals have to consume them in order to know what utility they derive. When uncertainty with respect to the quality of the good is high, a buyer who is willing to pay for a good but also risk-averse may abstain from the purchase due to concerns of overpaying. This may be the case for many cultural goods, in particular if the consumer has the choice to obtain a free unauthorized version of the product as an alternative, mainly those offered digitally. If such a problem appears, the sellers of cultural goods may consider the implementation of a voluntary pay-what-you-want scheme (PWYW). In such a payment scheme, each consumer voluntarily sets a price adequate to her expectations about quality of the good or, if payment is made after consumption, a price adequate to actual quality of the good.

The pay-what-you-want payment method has been around for a long time in the cultural sector: consider, for example, street performers and buskers who can get voluntarily paid by a passer-by. Recently a growing number of real businesses started to use this model, thus it appears that pay-what-you-want schemes may be a profitable, alternative pricing policy. Examples of practical application of PWYW include restaurants and cafés, music albums, video-games, museums, concerts, and theaters (more can be found at Kim *et al.* (2009), Kim *et al.* (2014), Regner and Barria (2009) or Mak *et al.* (2010)). As a result of successful practical implementations of PWYW, this strategy have increased in popularity amongst researchers and the literature discussing PWYW scheme started to grow.

In the PWYW literature, two research streams can be found. One focuses on explaining why a buyer pays something at all even if she could pay nothing (for the extensive discussion see León *et al.* (2012) or Greiff and Egnert (2016)). The other focuses on factors relevant to consumers' decisions about the size of voluntary payments. Factors found as significant in consumers' price-setting decision process are: external and internal reference price, self-image, expected quality, anonymity or social distance relationship, defined as

degree of personal interaction (Andreoni and Bernheim, 2009; Hoffman *et al.*, 1994; Hoffman *et al.*, 1996; Kim *et al.*, 2009; Kim *et al.*, 2014; Natter and Kaufman, 2015). Amongst these drivers, reference prices received remarkable attention. However, there are still uncertainties over whether the external reference price acts as a pure anchor or as a signal associated with quality of the good. Additionally, it is also unclear to what extent the individual internal reference price adjusts to the provided external reference price.

In this study we address the two aforementioned problems. First, we separate the anchoring effect of external reference prices, in a form of market price, from the quality signal effect. Controlling both the effect of the external reference price and the uncertainty with respect to the expected quality of the good, we analyse the effect of the internal reference price on the size of the PWYW payments. Second, we also use the advantage of the proposed method – a survey with vignette experiment – to analyse the effects of consumer's individual characteristics and perceptions on magnitude of the voluntary payments. We measure subject's individual internal reference price, propensity to take a risk, perceptions of experience character of the analysed good (i.e. the degree to which the consumer believes the good is an experience good), and belief about the production costs of a product. These problems, to the best of our knowledge, has not been empirically analysed before.

In the following section we discuss the literature and present the research hypotheses. We verify the hypotheses using a vignette technique, i.e. an online survey with hypothetical scenarios described in Section 3. Section 4 provides results of the study. Section 5 concludes and offers practical implications.

2. Theoretical background and hypotheses

In the PWYW mechanism, payments can be made either before or after consumption. If the payment is made before consumption, consumers bear not only the risk of paying too much, but also the risk of not paying enough. Potential costs of paying too little have some psychological aspects of downgrading individual's self-image (resulting in guilt) and beliefs about own external, social image (resulting in shame). These psychological motives are commonly used to explain why a buyer pays something at all even if she could pay nothing (Gneezy *et al.*, 2010; Gneezy *et al.*, 2012; Kunter, 2015; Regner and Riener, 2012). External reference prices (in each form: average, suggested, market, minimum or maximum contribution) reduce the risk of either paying too much and/or not paying enough.

PWYW research provides empirical evidence that external reference prices do in fact act as anchors, making consumers' willingness to pay close to the external reference price. They are also extremely important in the consumers' evaluation of the size of the prices offered in the PWYW scheme. Gautier and van der Klaauw (2012) tests for anchoring effects on PWYW payments for hotel stays by varying the prices provided by the seller. They found that increasing reference prices significantly increased PWYW payments, but only for consumers who did not know about the PWYW pricing until after booking the room. Kim *et al.* (2014) found that the provision of an external reference price increased PWYW payments with the average proportion of prices paid in PWYW scheme to the reference price becoming lower as the reference price increases (this proportion decreases more or less depending on the product type). Authors suggest, that external reference prices should be provided especially when it is difficult to accurately assess the exact price or value of a product or service. Johnson and Cui (2013) studied the impact of minimum, maximum, and suggested prices in lab experiments in which participants hypothetically purchased a concert ticket. They found that both minimum and maximum external reference prices negatively affect average declared PWYW payments when compared with a control group without any external reference price. In case of suggested prices (formulated as "most people pay around \$X") participants choose prices close to the suggested price, resulting in reducing price variances. Authors conclude that suggested price is an effective external reference price tool that can be useful for firms willing to avoid low voluntary payments, but only when the suggested price is higher than or close to internal reference price (calculated by the authors as the average price chosen in the control condition). Suggesting a price in PWYW payments enables firms to communicate their product's value. Higher reference price signal the product's value and increase consumers' expectations on quality of the good prior to consumption.

We extend the above strand of literature controlling both the effect of the individual internal reference price (instead of using an aggregate measure), and the effect of the expected quality of the good on the size of the voluntary payments in different conditions: with low, dominant, high and no external reference prices provided. We propose that, if for the given expected quality of the good, the reference price is provided, the risk of not paying enough is reduced and only the risk of paying too much remains. This risk can be reduced by paying a price lower than the suggested reference price. In other words, consumers adjust their willingness to pay for the product to the anchor, but only up to the price they perceive to be

fair considering their individual factors such as financial situation. Reference price may also influence consumers' willingness to pay for the product through the prism of the perceived savings, resulting in the voluntary payments lower than the reference price (Chandrashekar and Grewal, 2006). Thus, our first hypothesis states:

H1: Given expected quality of a good, PWYW payments amongst consumers who are not provided with external reference prices are higher than amongst consumers who have this information if and only if their internal reference price exceeds external reference price.

Heyman and Ariely (2004) define two general categories that describe exchange relationships: money-market relationships and social-market relationships. In money-market relationships, exchange between at least two parties is usually regulated by the price of a product. Social-market relationships are characterized by social exchange norms (i.e. norms of cooperation, norms of reciprocity, and norms of distribution). People feel bad violating social norms and thus if they do choose to purchase the product or service in PWYW scheme, they often choose to pay a "fair" price that does not have a negative effect on their self-image (Gnezy *et al.*, 2012). Similarly conclusions come from outcome-based theory of social preferences (Andreoni and Miller, 2002; Bolton and Ockenfels, 2000; Fehr and Schmidt, 1999) which assume that people are not purely driven by self-interest but also care about the well-being of others. In case of voluntary PWYW payments, the larger the buyer's benefit from consuming the product and the higher the seller's cost of production, the higher the payment in PWYW system shall be. Thus our second hypothesis is as follows:

H2: The PWYW payments increase with consumers' perception of costs of production as the share of the products' price.

H2a: The PWYW payments increase with consumers' perception of authors reward as the share of the products' price

3. Research description and method

To test the aforementioned hypotheses, we used an online survey with hypothetical scenarios (i.e. vignette technique). The section that follows describes participants and the participant

selection process, survey construction, and variables from the model used to test the hypotheses. Lastly, it provides a detailed description of scenarios used in the vignette experiment.

1.1. Subjects

The questionnaire was distributed by e-mail amongst clients of one of the largest eBook retailers in Poland (Virtualo.pl), which is visited by around half million users every month. A total of 343 subjects participated in the survey. The data was collected between November 2015 and March 2016.

The cooperating eBook retailer sells 32 literary genres, including textbooks, guidebooks, scientific and academic literature, popular science readings, erotic literature, classic literature collection, religious books etc. Books from different literary categories are bought for various reasons: entertainment, information, obligation to read, social pressure, learning, need of a gift. We wanted to have comparable observations, representing buyers led by the same motivation – reading for pleasure and entertainment, and also to avoid commonly known required readings and classic titles, about which respondents could have highly informed preferences. We decided to collect responses from readers of selected literary genres, rather than have it dispersed between numerous distinct categories. Genres identified as the most commonly read by cooperating retailer clients were fantasy and crime fiction. The survey was distributed solely amongst readers of these two genres. All of the survey respondents not only bought, but also read either of the two genres right before filling out the survey.

The respondents' socio-economic characteristics were close to an average national readers' profile. Survey participants were 52% men, aged between 18 to 70 (73% between 25 and 45) with satisfactory level of income (95% stated that they can at least afford everyday spending and only need to save money for bigger expenses).¹

¹ Comparison with Polish readers' statistics presented in national reading report Koryś *et al.* (2015), where 39% of readers are men, 61% women, with 53% aged between 20-49 and 91% at least moderately satisfied with their material situation.

1.2. Survey design

The online survey was created on an online, interactive survey development site. The questionnaire consisted of three sections (translation of the survey is included as Appendix A). It started with a short introduction, presenting the University of Warsaw as the entity conducting the research, and ensuring confidentiality and anonymity. The first section consisted of questions about one's most recently bought and read book from Virtualo.pl online bookstore regarding the title, price (if recalled by the respondent), assessment of contents and retailers service. This section also enabled us to elicit respondents' perception of production costs: respondents were asked to state the share of two kind of costs – publishing costs, and writer's honorarium – in the price of their most recently purchased eBook. Respondents' declarations of average prices paid for eBooks allowed us to control their internal reference price.

Next, the vignette experiment was presented (described in detail in the next section). It was followed by a set of complementary questions: average price paid for an eBook, respondent's indicated ability to assess quality of an eBook and of an eBook reader measured on a 11 point Likert-type scale starting with 'I definitely cannot assess the quality of an eBook/an eBook reader' to 'I definitely can assess the quality of an eBook/an eBook reader', and self-reported personal risk attitudes measured also on an 11-point scale on which respondents declared their 'willingness to take a risks, in general'.² Finally, socio-demographic characteristics questions were asked. Respondents could also take part in small prize drawings for completion of the survey.

1.3. Vignette scenarios

At the moment they started the survey, respondents were randomly assigned to one of four vignette experimental treatments. These treatments varied with respect to suggested eBook market price: low/ dominant /high/ no external reference price. Suggested market prices were cautiously chosen from the range of retailers prices: 19.90 PLN (around 7.70 EUR) is the retailer's dominant price, 9.90 PLN (2.35 EUR) is a low, promotion price and 39.90 PLN (9.50 EUR) is a high price. In the control group, market price was not presented. Each respondent was presented with three choice situations (scenarios). These three scenarios

² The general risk question is considered in a literature as a good predictor of other risky behaviours (Dohmen *et al.*, 2005, 2011)).

differed with respect to degree of the hypothetical consumer Patricia's certainty about the eBook quality, but the reference prices remained constant. In each of the situations, respondents had to declare how much they believe Patricia pay for the eBook available in PWYW scheme. In our study, Patricia's voluntary payments declared by the respondents are defined as estimated PWYW. This gives a design with $4 \times 3 = 12$ scenarios. All scenarios and treatments are presented in Appendix B.

4. Results

The proportion of estimated PWYW values to the reference price decreases with higher reference price, which is consistent with the result received by Kim *et al.* (2014) in an experiment with real PWYW payments. The data also shows that 86% of the respondents chose a round, whole-zloty amount (.00 price ending). This confirms Lynn *et al.* (2013) observation of consumer preference for round over non-round prices. Thus, estimated PWYW values discussed below follow the characteristic of real PWYW payments, which increases the reliability of our results.

Kim (2009) summarizes different approaches of how the internal reference price can be defined. Following the examples from Kim (2009), the internal reference price can be derived from consumers' previous purchases, either as a weighted average of prices paid for products from the same category, or as the price recently paid for the same brand product. We mix these two approaches and define respondents' individual internal reference price as average of price most recently paid for the eBook and an average price paid for the eBooks. Using this formula we calculate individual respondents' internal price, which on average is 19,53 PLN, i.e. slightly lower than the dominant market price: 19,90 PLN.

We calculate average estimated PWYW values in all scenarios and compare them to the corresponding average in the control condition. Table 1 shows that estimated PWYW values increase not only with expected quality of the eBook but also with an external reference price within eBook with given expected quality. We thus observe a significant pure anchoring effect, independent from the expected quality of the good.

Table 1. Average estimated PWYW payments for eBook with perceived low, unknown and high quality. Estimations given for different reference prices (in PLN) and without the reference price (Control).

VARIABLES	Low quality				Unknown quality				High quality			
	Control	9.90	19.90	39.90	Control	9.90	19.90	39.90	Control	9.90	19.90	39.90
Min	0	0	0	0	0	0	0	8	1	1	5	15
Max	36.7	10	20	29	36.7	15	20	30	50	20	25	39.9
Mean	8.902	4.115	8.476	11.481	14.151	6.449	12.361	17.736	21.260	9.065	17.31	25.703
Test statistic (1)	-	7.027	0.621	-3.787	-	11.202	2.605	-5.222	-	12.589	4.079	-4.586
p-value (2)	-	0.000	0.268	1.000	-	0.000	0.005	1.000	-	0.000	0.000	1.000
Standard Dev.	5.972	3.168	4.551	6.046	6.032	2.738	3.5125	5.188	8.497	2.733	3.314	5.941
Chi square (3)	-	269.768	130.944	74.063	-	368.352	224.465	102.667	-	736.222	500.816	155.511
Pr(C > c) (4)	-	0.000	0.000	0.557	-	0.000	0.000	0.117	-	0.000	0.000	0.000
Observations	77	78	78	84	77	78	78	84	77	78	78	84

(1) One-sample t-test test comparing the means.

(2) Ha: mean from treatment “control” > mean from treatment 9.90, 19.90 and 39.90, respectively.

(3) One-sample chi square test of variance

(4) Ha: standard deviation from treatment “control” > standard deviation from treatment 9.90, 19.90 or 39.90, respectively.

Table 2. Average estimated PWYW payments for eBook with perceived low, unknown and high quality. Estimations given for different reference prices (in PLN) and different levels of internal of reference price.

Interval of individual internal reference price	Average estimated PWYW payments											
	Low quality				Unknown quality				High quality			
	Control	9.90	19.90	39.90	Control	9.90	19.90	39.90	Control	9.90	19.90	39.90
(9.90, max)	9.81	4.44	9.84	12.42	14.54	6.96	12.91	18.56	20.94	9.29	17.50	26.23
p-value (1)		0.0001				0.0000				0.0000		
(19.90, max)	14.34	5.86	11.22	13.28	19.70	8.61	14.40	19.11	27.82	10.78	18.89	27.90
p-value (1)			0.1803				0.0401				0.0074	
(39.90, max)	-	-	-	24.99*	-	-	-	29.99	-	-	-	34.49
Observations	34	40	28	36	34	40	28	36	34	40	28	36

(1) H_a : mean from treatment “control” > mean from treatment 9.90 and 19.90, respectively, for a given interval of internal reference price.

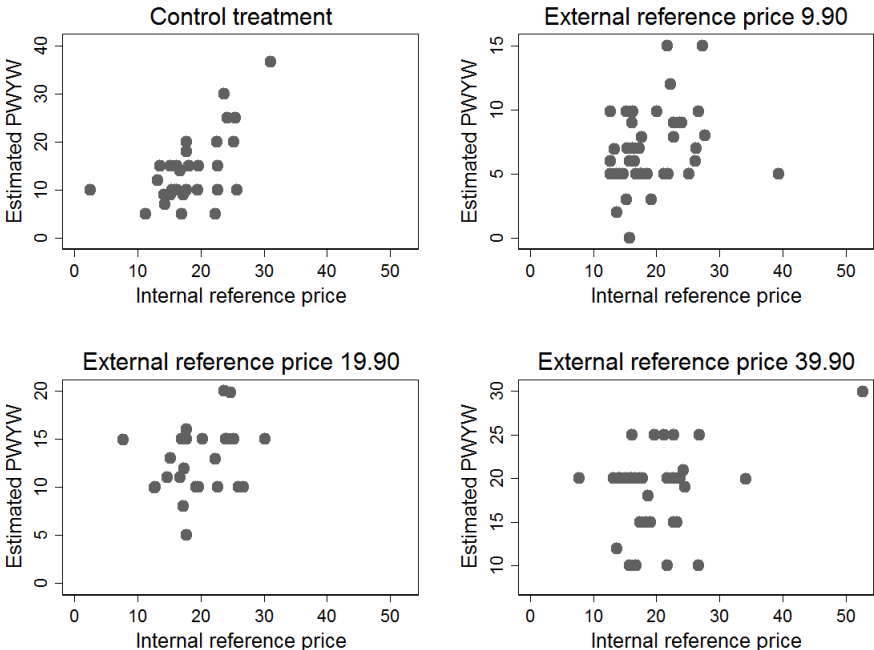
(-) No observations.

* One observation only.

In scenarios where respondents were informed about the external reference price being lower or equal to the dominant eBook market price (i.e. close to the average internal reference price), estimated PWYW payments are lower than in control treatment, independently of the expected quality of the eBook (Table 1). In case of the eBooks with suggested market price above the dominant eBook price, estimated average PWYW payments are significantly higher than in the control treatment. Moreover, when individual internal reference price is higher than external reference price, estimated average PWYW payments are significantly higher amongst respondents from control treatment than amongst consumers who were provided with an external reference price (Table 2). Those results support Hypothesis 1.

Scatterplots 1-4 show the relation between internal reference price and estimated PWYW values for each treatment separately when quality of the eBook is unknown (in case of the eBook with low and high quality graphs look analogously). In the control treatment, internal reference price is most visibly positively correlated with estimated PWYW values.

Figure 1. The effects of external and internal reference prices on estimated PWYW measured for medium level of quality uncertainty.



To investigate if the internal references somehow do affect PWYW payments when an external reference price is provided and to analyse the effects of other factors which may affect respondents' decisions about the size of the voluntary payments, we run separate OLS regressions for each treatment. (Table 2). Beside the factors discussed in the theory section:

the perceived percentage of the price believed to cover the author's compensation (*AuthorReward*), the perceived percentage of the price believed to cover the publication costs (*Pub.Costs*) and internal reference price (*IntRefPrice*), we also add an individual's risk-taking propensity (*RiskLoving*) and two measurements of the experience character of the eBook. The first measure is the difference between a consumer's content rating after reading the book and her expectations before reading it (*BookExp*). The second one, represents the difference between respondent's indicated ability to assess quality of an eBook and of an eBook reader (*IndExp*). We expect that if a respondent sees an eBook as an experience good than it should be harder for her to assess its quality before purchase than to discover a quality of non-experience good, such as an eBook reader.

Experience goods are related to quality uncertainty. Whenever an uncertainty exists in an economic decision, risk attitude can play an important role. Therefore, we expected that risk-averse buyers might be willing to pay less for an eBook in fear of paying an inadequately high price (Egbert *et al.*, 2014).

$$PWYW_i = \alpha_1 Pub.Costs_i + \alpha_2 AuthorReward_i + \alpha_3 RiskLoving_i + \alpha_4 IndExp_i + \alpha_5 BookExp_i + \alpha_6 Age_i + \alpha_7 Sex_i + \alpha_8 IntRefPrice_i + const$$

where:

Pub.Costs - the perceived percentage of the price believed to cover the publication costs,

AuthorReward - the perceived percentage of the price believed to cover the author's compensation,

RiskLoving - an individual's risk-taking propensity measured on an 11-point scale on which respondents declared their willingness to take a risks, in general,

IndExp - the difference in the ability to assess the value of an eBook and eBook reader,

BookExp – difference between consumers content rating after reading the book and her expectations before reading it,

IntRefPrice - the average of the price paid for eBook lastly bought in Virtualo.pl online bookstore and the price usually paid for the eBook.

Table 3. Dependent variable: estimated PWYW payments. Separate regressions for eBook with different values of reference prices and without the reference price (Control).

VARIABLES	Control	9.90	19.90	39.90
Publication Costs	0.114** (0.050)	0.038* (0.022)	0.052 (0.042)	-0.061 (0.074)
Author Reward	0.103*** (0.039)	0.027 (0.019)	0.009 (0.036)	0.067 (0.049)
Risk Loving	0.754 (0.460)	0.429** (0.168)	-0.073 (0.227)	0.276 (0.352)
Ind Exp	-0.041 (0.535)	-0.221* (0.129)	-0.166 (0.299)	0.011 (0.322)
Book Exp	0.078 (0.632)	-0.051 (0.284)	0.059 (0.464)	1.444 (0.942)
Age	0.134 (0.131)	-0.004 (0.028)	-0.028 (0.071)	-0.080 (0.085)
sex = 2	3.477* (1.886)	2.984*** (0.782)	0.618 (1.222)	2.409 (1.683)
Internal Reference Price	0.537*** (0.179)	0.177*** (0.063)	0.241* (0.130)	0.393*** (0.125)
Constant	-12.702** (5.873)	-1.288 (2.004)	8.037** (3.504)	11.230** (5.510)
Observations	102	120	84	108
R-squared	0.373	0.202	0.075	0.156

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We observe positive and significant effect of the internal reference price on estimated PWYW values in all treatments (Table 3). Contrary to other situations, without the external reference price, estimated PWYW values depend additionally on individual factors such as consumers' perception of higher publication costs and authors reward as the share of the product's price (the exception is the effect of the publication costs in a treatment with low price).

5. Conclusions

In the hypothetical scenarios, we asked clients of one of the largest eBook retailers in Poland how much hypothetical consumer Patricia will pay for the eBook available in the PWYW format. Scenarios differ with respect to degree of Patricia's certainty about the eBook quality and to a particular eBook's external reference price. Using an online survey we controlled respondents' individual characteristics and calculated individual internal reference prices.

We show that estimated PWYW values increase with the suggested external reference price, even if the expected quality of the book remains unchanged. However, when internal reference price is higher than external reference price, estimated PWYW payments are significantly higher if reference price is not provided. For the higher external reference price, the relation is opposite. Our findings are consistent with Johnson and Cui (2013) conclusions that an external reference price higher than the consumer's internal reference price creates upward pressure, increasing the consumer's chosen price. An external reference price lower than the consumer's internal reference price creates the opposite effect.

With no reference price, consumers' payments depend positively on different individual's factors such as the perceived percentage of the price believed to cover the author's compensation and the publication costs, as well as the internal reference price. This suggest that, if the reference price is not provided, voluntary payments might be enhanced by informing the consumers about the costs needed to produce the good. In case of cultural goods, some reminder about the need to reward authors' work might increase the payments.

References

- Andreoni, J. and Miller, J. (2002), "Giving according to GARP: An experimental test of the consistency of preferences for altruism", *Econometrica*, Vol. 70 No. 2, pp. 737-753.
- Bolton, G.E. and Ockenfels, A. (2000), "ERC: A theory of equity, reciprocity, and competition", *American Economic Review*, Vol. 90 No. 1, pp. 166–193.
- Chandrashekar, R. and Grewal, D. (2006) "Anchoring effects of advertised reference price and sale price: The moderating role of saving presentation format", *Journal of Business Research*, Vol. 59 No.10, pp. 1063-1071.
- Dohmen, T.J., Falk, A., Huffman, D., Sunde, U., Schupp, J. and Wagner, G.G. (2005), "Individual risk attitudes: New evidence from a large, representative, experimentally-validated survey", IZA Discussion Paper No. 1730, available at: <http://ssrn.com/abstract=807408> (accessed 20 April 2016).
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J. and Wagner, G.G. (2011), "Individual risk attitudes: Measurement, determinants, and behavioral consequences", *Journal of the European Economic Association*, Vol. 9 No. 3, pp. 522–550.
- Egbert, H., Greiff, M. and Xhangolli, K. (2014), "PWYW Pricing ex post Consumption: A Sales Strategy for Experience Goods", MPRA Paper No. 53376, University Library of Munich, Germany, available at: https://mpra.ub.uni-muenchen.de/53376/1/MPRA_paper_53376.pdf (accessed 30 May 2017).
- Fehr, E. and Schmidt, K.M. (1999), "A theory of fairness, competition, and cooperation", *Quarterly journal of Economics*, Vol. 114 No. 3, pp. 817–868.
- Gautier, P.A. and Klaauw, B.V.D. (2012), "Selection in a field experiment with voluntary participation", *Journal of Applied Econometrics*, Vol. 27 No. 1, pp. 63-84.
- Gneezy, A., Gneezy, U., Nelson, L.D. and Brown, A. (2010), "Shared social responsibility: A field experiment in pay-what-you-want pricing and charitable giving", *Science*, Vol. 329 No. 5989, pp. 325–327.
- Gneezy, A., Gneezy, U., Riener, G. and Nelson, L.D. (2012), "Pay-what-you-want, identity, and self-signaling in markets", *Proceedings of the National Academy of Sciences*, Vol. 109 No. 19, pp. 7236–7240.
- Heyman, J. and Ariely, D. (2004), "Effort for Payment: A Tale of Two Markets", *Psychological Science*, Vol. 15 No. 11, pp. 787-93.
- Johnson, J. W. and Cui, A.P. (2013), "To influence or not to influence: External reference price strategies in pay-what-you-want pricing", *Journal of Business Research*, Vol. 66 No. 2, pp. 275–281.

- Kim, J. Y., Natter, M. and Spann, M. (2009), “Pay what you want: A new participative pricing mechanism”, *Journal of Marketing*, Vol. 73 No. 1, pp. 44–58.
- Kim, J. Y., Kaufmann, K. and Stegemann, M. (2014), “The impact of buyer–seller relationships and reference prices on the effectiveness of the pay what you want pricing mechanism”, *Marketing Letters*, Vol. 25 No. 4, pp. 409–423.
- Koryś, I., Michalak, D. and Chymkowski, R. (2015), “Stan czytelnictwa w Polsce w 2014 roku”, National Library of Poland, Warsaw, available at: <http://bn.org.pl/download/document/1422018329.pdf> (accessed 9 May 2016).
- Kunter, M. (2015), “Exploring the pay-what-you-want payment motivation”, *Journal of Business Research*, Vol. 68 No. 11, pp. 2347-2357.
- Lynn, M., Flynn, S.M. and Helion, C. (2013). “Do consumers prefer round prices? Evidence from pay-what-you-want decisions and self-pumped gasoline purchases”, *Journal of Economic Psychology*, Vol. 36, pp. 96-102.
- Mak, V., Zwick, R. and Rao, A.R. (2010), “Pay what you want as a profitable pricing strategy: Theory and experimental evidence”, Unpublished Manuscript, University of Cambridge, Cambridge, UK, available at: <http://rady.ucsd.edu/faculty/seminars/2010/papers/zwick.pdf> (accessed 30 May 2017).
- Mazumdar, T., Raj, S.P. and Sinha, I. (2005), “Reference price research: Review and propositions”, *Journal of marketing*, Vol. 69 No. 4, pp. 84–102.
- Natter, M. and Kaufmann, K. (2015), “Voluntary market payments: Underlying motives, success drivers and success potentials”, *Journal of Behavioral and Experimental Economics*, Vol. 57, pp. 149-157.
- Regner, T. and Riener, G. (2012), “Voluntary payments, privacy and social pressure on the internet: A natural field experiment”, DICE Discussion Paper, No. 82, available at: <https://www.econstor.eu/bitstream/10419/68231/1/734357842.pdf> (accessed 30 May 2017).
- Regner, T. and Barria, J.A. (2009). “Do consumers pay voluntarily? The case of online music”, *Journal of Economic Behavior & Organization*, Vol. 71 No. 2, pp. 395-406.

Appendix A: Survey

Questions 1-4 relate to the last eBook you bought and read from Virtualo's online bookstore.

Question 1a. Please state the title of the last eBook you bought and read from Virtualo's online bookstore.

Question 1b. Do you remember how much it cost?

- a) I remember the price of the eBook
- b) I do not remember the price of the eBook

Question 1c. [Only if one answered a) in question 1b.] What was the price of the eBook?

Please write in the price in Polish Zloty below.

Question 3. The questions below refer to your expectations about the given eBook before its purchase. Please rate the following aspects:

Please chose one answer from the scale below:

What were your expectations about the purchased eBook prior to reading it?									
I was worried this could be a really bad eBook									I was expecting it to be a very good eBook
0 <input type="radio"/>	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>	6 <input type="radio"/>	7 <input type="radio"/>	8 <input type="radio"/>	

Did you read the reviews of the last purchased eBook, hear opinions about it, or reassure yourself of its quality prior in any other way prior to purchase?									
I did not read or hear anything about this eBook prior to purchasing it									I read and heard a lot about this eBook prior to purchase
0 <input type="radio"/>	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>	6 <input type="radio"/>	7 <input type="radio"/>	8 <input type="radio"/>	

Question 4. In the questions below we will ask you about your thoughts on the eBook after reading it. What are your ratings on the aspects related to the eBook?

Please chose the answer you deem appropriate on the scale.

	Definitively Negative								Definitively Positive
	0	1	2	3	4	5	6	7	8
Content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Service of the seller (time of delivery, transaction quality, technical support)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 5. What percent of the eBook price do you think is the cost of publication?

Please give an answer between 0 and 100.

Question 6. What percent of the eBook price do you think is goes to the author?

Please give an answer between 0 and 100.

[3 scenarios here, see Appendix B]

Question 10. How much do you most often pay for a single eBook?

Please pick a price range in Polish Zloty.

- a) 0-10
- b) 11-20
- c) 21-30
- d) 31-40
- e) 41-50
- f) 51-60
- g) 61-70
- h) 71-80
- i) 81-90
- j) 91-100
- k) 101 or more

Question 11. How do you rate yourself?

Please pick one answer on the 11-point scale.

Are you, in general, a person willing and ready to take on risks or are you more risk-averse?											
I am very unwilling to take risks.											I am fully ready to take on risks.
0	1	2	3	4	5	6	7	8	9	10	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Question 12. Taking into account the books you purchased and read within the last year, how do you rate your own ability to evaluate the value of a book prior to purchasing it?

Please pick one answer on the 11-point scale.

I definitely cannot rate the value of a book prior to purchase											I definitely can rate the value of a book prior to purchase
0	1	2	3	4	5	6	7	8	9	10	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Question 13. How do you rate your ability to evaluate the value of electronic devices used to read eBooks?

Please pick one answer on the 11-point scale.

I definitely cannot rate the value of eReaders before purchase											I definitely can rate the value of eReaders before purchase
0	1	2	3	4	5	6	7	8	9	10	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Metrics

Age:

Sex:

- a) female
- b) male

Appendix B: Scenarios and treatments

Introduction:

In the „Pay What You Want” system, every buyer individually decides what price to pay for the given product. Below we present a few situations in which Patricia chooses how much she will pay in this system for an eBook. Based on the described situations, please give the price Patricia will choose to pay for the eBook.

Treatment 1:

Question 1. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 9,90 pln. Patricia read many reviews about the eBook and is convinced she will enjoy it. How much does she pay?

Question 2. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 9,90 pln. Patricia read many reviews about the eBook and she has mixed feelings about whether she will enjoy it. How much does she pay?

Question 3. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 9,90 pln. Patricia read many reviews about the eBook and is worried she will not enjoy it. How much does she pay?

Treatment 2:

Question 1. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 19,90 pln. Patricia read many reviews about the eBook and is convinced she will enjoy it. How much does she pay?

Question 2. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 19,90 pln. Patricia read many reviews about the eBook and she has mixed feelings about whether she will enjoy it. How much does she pay?

Question 3. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 19,90 pln. Patricia read many reviews about the eBook and is worried she will not enjoy it. How much does she pay?

Treatment 3:

Question 1. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 39,90 pln. Patricia read many reviews about the eBook and is convinced she will enjoy it. How much does she pay?

Question 2. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 39,90 pln. Patricia read many reviews about the eBook and she has mixed feelings about whether she will enjoy it. How much does she pay?

Question 3. Patricia is planning to purchase an eBook in the „Pay What You Want” system. In traditional bookstores, the book costs 39,90 pln. Patricia read many reviews about the eBook and is worried she will not enjoy it. How much does she pay?

Control:

Question 1. Patricia is planning to purchase an eBook in the „Pay What You Want” system. Patricia read many reviews about the eBook and is convinced she will enjoy it. How much does she pay?

Question 2. Patricia is planning to purchase an eBook in the „Pay What You Want” system. Patricia read many reviews about the eBook and she has mixed feelings about whether she will enjoy it. How much does she pay?

Question 3. Patricia is planning to purchase an eBook in the „Pay What You Want” system. Patricia read many reviews about the eBook and is worried she will not enjoy it. How much does she pay?



FACULTY OF ECONOMIC SCIENCES
UNIVERSITY OF WARSAW
44/50 DŁUGA ST.
00-241 WARSAW
WWW.WNE.UW.EDU.PL