



The Pay What You Want pricing strategy applied to digital products: an essay

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Received: 3 August 2021 / Accepted: 4 November 2021
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Abstract

This study aims to examine if the pricing strategy “Pay What You Want” can be the best option for the industry of digital products’ distribution, when compared with other fixed prices policies. To verify the adequacy of Pay What You Want Pricing strategy, we conducted an online survey using a sample of online consumers, to evaluate their buying intention and the willingness to pay regarding a set of digital products. Results show that, in some instances, the Pay What You Want Pricing strategy yields a greater sales revenue through the reduction of the individual amounts paid, which is counter-balanced by the increasing number of transactions. We conclude that this pricing strategy is as much suitable for companies, as they may potentially increase their sales revenue.

Keywords Pricing strategy · Pay What You Want · Digital products · Sales revenue · Cost structure

Introduction

Investigation in behavioural economics has shown that individuals frequently act irrationally, modifying their action when identical choices are framed differently (Thaler 1999). The 2017 Nobel Memorial Prize in Economic Sciences woke-up marketers for the subtle nuances of human being as consumers and decision-makers.

Our study approaches one of the most innovative and interactive pricing strategies—Pay What You Want (PWYW)—and its application to an equally creative industry of our time—the industry of online digital contents.

With a PWYW pricing strategy, a company delegates the power of setting prices to its customers, which constitutes an extreme form of price discrimination, since this mechanism forces the selling part to accept any price, set by the buyer, including paying none for it, either a product or service.

Over the years, the concept of price and its scope have been subject to change in the business world. In the past, the concept of price was reduced to a set of calculations, more or less complex, that maximize the operational result. However, in present times, with the increasing competitiveness in the markets, this concept has evolved to the point that price is seen as an attribute of the product or a component of the product’s utility or even brand equity.

The relationship between a company’s performance and the pricing strategy used was the subject of a study by Toni et al. (2017). The authors focussed on three pricing strategies—customer value-based pricing, competition-based pricing, and cost-based pricing—and were able to confirm such a relationship. Solid knowledge and a good choice of the pricing strategy can improve a company’s results, both by its potential to maximize revenue and by its contribution to cost management throughout the product’s life cycle (Dunk 2004).

The ultimate goal for-profit organizations is to achieve the best financial result possible. However, today there is an underlying notion that the way to reach that goal is not always linear. The impact of price variations in the sales

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volume or the production volume is far more complex than what the classic economic theory anticipated (Webster 1992).

Toni et al. (2017) focussed on the relationship between a company's pricing strategy and performance, their main argument is that the price-related decision is one of the most critical decisions a management team can make, since they have an intrinsic impact on its competitiveness and profitability.

As Mehadafi (2007) defined prices are established, using costs and other internal data and different market-related information. Therefore, from Mehadafi's point of view, the pricing decision is not limited to a simple accounting or marketing exercise. It is a decision that influences many other aspects of an organization's life, such as those related to production, investment, or financing (Mehadafi 2007).

On the other hand, given the impact of pricing decisions on a company's profitability, it is understood that price has been the element of marketing-mix most impervious to sharing power with consumers (Barros 2017). However, today's competitive business environment emphasizes the need for companies to differentiate themselves.

In the past decades, consumer price behaviour, online price discrimination and dynamic prices have been extensively researched in digital economy literature. The increasing competition in electronic markets leads to intense price dispersion, sustained by lower companies "menu costs" (e.g. retailers adjust their prices more finely or more frequently at a low cost), and by lower consumer search costs that lead to a reduction in information asymmetries, which can increase price elasticity (Torres and Martins 2007). A number of economists have asserted that electronic markets should be more efficient than conventional markets in several ways (Brynjolfsson and Smith 2000). Mostly, because online firms have zero costs stocks, which can provide a diversified offer at lower prices, online consumers behave as expected: they search for lower prices. If economics of shopbots are so important to research (Smith et al. 2002), then price concerns impacts on consumer are major relevant (Varian 2002). Since online consumers have near zero search costs and lower switching costs (Bakos 1997; Xing et al. 2006) they are less loyal because they are more likely to switch to an e-retailer for a better price. To cope with severe price competition and the resulting undermined profitability, e-retailers should explore price discrimination strategies based on customer's price behaviour profile, such as price-convenience, customers' willingness to pay a fair price or a price-premium via customer product-fit (Torres and Martins 2007).

Despite the extant knowledge on price discrimination and consumer price behaviour, there is little research that investigates consumer's participative pricing strategies, more specifically the effect of PWYW strategy regarding digital

goods, on business potential turnover. Knowing the strategic importance for managers to cope with severe price competition in electronics markets and the resulting undermined profitability, this paper addresses some relevant research questions to industry of digital goods: "Can a PWYW pricing strategy be adequate to the industry of digital goods?" Our main goal is to understand if a PWYW strategy is suitable for companies that sell online digital goods, from a business performance perspective, when compared with a fixed price strategy.

To answer the research questions, this paper is organized as follows: In the next section, we review the most relevant literature of participative pricing mechanisms (PPM) and PWYW strategies and its impact on consumer price behaviour and firm performance. The third section explains the methodology used in the empirical study. "Results and discussion" section presents the results of data analysis, and, in the final section, we draw the final conclusions, some managerial recommendations and suggestions for further research.

Literature review

Participative pricing mechanisms "allow for differentiated prices accounting for consumer heterogeneity and enable consumers (buyers) to exert some control over the final price for the transaction" (Kim et al. 2009, p. 44). In economics literature, PPM are often related with price fairness perception from customer's standpoint. Choia et al. (2015) founds when framing ticket prices as a discount rather than a surcharge significantly improved customers' price fairness perceptions. However, customers' price fairness perceptions changes significantly when considering the joint impact of several potential revenue management (RM) practices, such as dynamic prices or geographical prices. From the authors standpoint, this issue could be solved using PPM under which the retailer does not set an explicit price to be paid, such as pay-what-you-want pricing mechanism, may lower consumers' price image without lowering their internal reference price. Moreover, this could be quite useful for managers, as they have been failed to try RM as a pricing strategy. Besides, consumers display stronger preference to stay with the service provider in case of fair price perceptions than their preference to leave because of unfairness (Katyal et al. 2019).

Dekhili and Connan-Ghesquire (2013) explain that Pay What You Want (PWYW) means that the consumers will pay an amount of money considering the cost of the product or service and what they are willing to pay. From the consumer's point of view, paying a lower price is not the only attractive characteristic of this strategy. The opportunity to actively participate in the definition of the offered



product or service can also be appealing. These authors believe a new underlying relationship between seller and buyer, whence power is transferred and shared by both parties.

Also, PWYW is a helpful strategy to self-signalize the most profitable market segment for companies to target, based on customer price behaviour, as it allows the company to gather important information about their customers, namely the price they are willing to pay for their products and reach consumers priced out of the market (Kim et al. 2009, p. 46).

Additionally, Dekhili and Connan-Ghesquire (2013) consider that this pricing strategy can be a differentiating element. It increases the consumer's curiosity for the product and, consequently, it can have the potential to increase the company's market share and notoriety. The most famous PWYW initiative was adopted by the British rock band Radiohead, in 2007. The band allowed their fans to download from their web page a digital version of their album "In Rainbows" for a limited period, paying whatever price they find reasonable. As a result, this experiment generated a total revenue higher than all of Radiohead's previous digital sales combined. The band achieved more revenues with this pricing experiment, than they have achieved with all the sales of their previous album 'Hail to the thief'.

However, PWYW could also generate consumer's opportunistic behaviour, such as "free-riders", which undermines sales profitability and business performance. Since there is no floor limit to the price paid, the seller assumes the risk that the buyer may not pay a sufficient amount to cover the cost of a product or service or not pay at all (Kim et al. 2009).

Gneezy et al. (2012) go forward by performing several experiments in real offline and online businesses to understand the consumer's response to a PWYW offer and, in most cases, found an increase in the number of transactions and a decrease in the individual amounts paid, when comparing to the traditional fixed price offer.

A recent experimental investigation carried out by Kukla Gryz et al. (2021), on which 471 international travellers from 50 nations went on free city tours after which they remunerate the guide with voluntary PWYW payments, revealed differences in average payment sizes in relationship to cultural values.

Santana and Morwitz (2021, p. 265) emphasized that gender issues shape consumer payments in PWYW contexts. The authors proved that "men typically pay less than women in PWYW settings, due to gender differences in agentic versus communal orientation". In another turn, Narwal et al. (2021) examined how customers lower their motivation to pay more for products offered under PWYW by morally disengaging themselves from reciprocity concerns. They corroborate the attenuating role of perceived control on the

negative association between displacement of responsibility towards reciprocity concerns and willingness to pay more.

Another experimental study by Waskow et al. (2016) was conducted to understand the relationship between neural activity and a PWYW offer, comparing the amounts paid by a consumer in a fixed price-setting and PWYW. This study was applied to digital music and, in line with the proposed hypotheses, the authors found that the subjects of this study took advantage of the PWYW offer, paying lower amounts in this setting. Nevertheless, the amounts paid were significantly positive, demonstrating the benefits of PWYW pricing strategy (Waskow et al. 2016). However, this is a risky strategy, mainly when companies rely on dedicated patronage by consumers (Birnberg et al. 2021).

The online context is, perhaps, the perfect breeding ground for innovation and development of new solutions, in specific those related to marketing management strategies. So, unsurprisingly, the most innovative and unique pricing strategies have their origin, or had their greatest success, in this environment.

Our study focuses in digital products distributed online and, according to Lambrecht et al. (2014) encompass certain characteristics that set them apart from every other type of product. This type of products can be categorized as 'information goods' (Huang and Sundararajan 2011), 'non-rival goods' (Lambrecht et al. 2014), 'experience goods' (Edelman et al. 2014) and their marginal costs and distribution costs are almost zero (Lambrecht et al. 2014), which overwhelms lower prices impacts on revenues decreasing. We can also find this relation in classic economic theory which states an increase in the sales volume offsets when a potential price decreases.

Therefore, taking all together, we propose the following research hypotheses:

H1 A PWYW pricing strategy can lead to higher sales revenue, when compared with a fixed price strategy.

H2 The adoption of a PWYW pricing strategy can lead to lower individual amounts paid, when compared with a fixed price strategy.

Methodology

Sampling and data collection

In this study we intend to analyse the impact in sales revenue by adopting a PWYW strategy, establishing a comparison with the revenue that can be attained with a traditional fixed price strategy. This analysis focussed on sales revenue of digital products sold online.

To analyse the hypothesized relationships, we collected data from potential consumers of a set of digital products



sold online, through a survey specifically made for this study. This survey was conducted on a convenience sample between 2 and 21 April 2017, and from a total of 128 answers collected, 123 were considered valid.

The survey was divided into three sections. In the first section, the subjects were asked to answer 10 questions to assess their level of buying experience in the products' category, i.e. the subject's purchase frequency (PF) in 10 categories of digital products. The product categories included in this study were: "Digital music album", "Video streaming service", "Audio streaming service", "Productivity Software", "Anti-virus software", "e-Book", "PC Video-game", "Smartphone game", "Movie" and "Audiobook". To answer these questions, the respondent could choose between 5 levels of purchase frequency: "daily", "weekly", "monthly", "yearly" and "never".

In the second section of the survey, addresses individuals two questions about several products within the categories mentioned before. The first question assesses the intent of purchase (IP) of each product. In the second question, we asked the inquired what his/her willingness to pay (WTP) for each product.

In order to assess the IP, we asked individuals to disclose to what degree he/she was interested in purchasing a specific online digital product, using a ten-point Likert scale (0 "Definitely not interested in buying the product" and 10 "Definitely interested in buying the product"). After this question, individuals were asked to set the maximum amount they would be willing to pay for that product, this way we could assess the subject's WTP. The respondents were acknowledged that, if the answer to the first question was "0", i.e. if they were definitely not interested in purchasing a product, the answer to the WTP question would also have to be "0".

To achieve our study's goal, we decided to put in perspective the PWYW pricing strategy and a more common Fixed Price (FP) strategy. As such, our independent variable will be the 'pricing strategy', and the IP and WTP will be the dependent variables.

Prior to analyse the survey data, a set of market data was collected to determine, with a fair degree of accuracy, what the reference prices (RP) were for each of the digital products listed in the survey. The RP reported were based on the real prices and are shown in Table 1. The procedures followed to identify these RP are described below.

To determine the RP of a digital music album, we based our search on Google Play's platform (<https://play.google.com/store/music>) and collected the selling prices of the best-selling albums of each music genre in that platform. The RP is the result of a simple arithmetic average of those prices.

The RP of the 'Video Streaming Service' category was obtained through the direct observation of the

Table 1 Reference price

Category	Product	RP (€)
Music Album	Of the respondent's preference	8.21
Streaming Video	Amazon Prime Video	5.99
Streaming Video	Netflix	7.99
Streaming Video	Other	6.99
Streaming Audio	Spotify	6.99
Streaming Audio	Google Music	6.99
Streaming Audio	Apple Music	6.99
Streaming Audio	Other	6.99
Productivity Software	Microsoft Office	149.00
Productivity Software	Ability	34.99
Productivity Software	Other	92.00
Anti-virus Software	Kaspersky	39.95
Anti-virus Software	Norton	49.98
Anti-virus Software	McAfee	49.95
Anti-virus Software	Other	46.63
E-book	Technical and school books	7.55
E-book	Fiction	6.66
PC Game	Of the respondent's preference	23.13
Smartphone Game	Of the respondent's preference	3.25
Movie	Of the respondent's preference	12.31
Audiobook	Technical and school books	21.96
Audiobook	Fiction	23.47

non-promotional selling prices at the time and were collected from the websites of the companies that provided these services. As in the previous category, the RP is the result of the arithmetic mean of each of the selling prices of the observed streaming services. The same process was used to calculate the 'Audio Streaming Services' RP.

For the e-book RP, we gathered information about the selling prices of the top-selling titles in the six major categories on Google Play. We decided to divide the products into categories according to their intended purpose: 'technical and school' and 'fiction'.

For the categories' PC game' and 'Smartphone game', we sourced the selling prices from the top ten bestselling titles from Steam (<http://store.steampowered.com/>) and Google Play, respectively. The resulting RP was calculated as the average of the before mentioned prices.

The 'movie' category's RP was calculated as the average of the top five bestselling titles of Google Play's genres 'Action and Adventure', 'Animation', 'Drama', 'Comedy', 'Musical' and 'Horror'.

Similar to the e-book's RP, the audio-books' RP was based on the prices of five bestselling audio-books of each category from Audible's online store (<http://www.audible.com/>). We divided the audio-books according to their purpose: 'technical and school' and 'fiction'.



Data analysis

The respondents were divided into two subsamples of data: FP and PWYW. According to their individual WTP for each specific product and how this amount matches to the product's RP, the respondents were included in the PWYW subsample or in both PWYW and FP subsamples. Thus, we can easily see that the two subsamples differentiate themselves according to the pricing strategy used.

In practical terms, this means that, for each product, a subject was allocated to the FP subsample if his/her WTP for that product was equal or greater than the RP, and his/her IP is greater than zero. This means that the subject derives utility from purchasing that digital product at a price equal to the RP and, therefore, is interested in buying that product at that price. In the case of the PWYW, since the buyer sets the price himself unconditionally, any amount paid—even zero—is sufficient to place an individual in the PWYW subsample, since he derives utility from that purchase regardless of the amount paid. Therefore, for this subsample and to each product, we included all respondents who have an IP greater than zero.

The results of this study are presented in the next chapter.

Results and discussion

Our sample size consisted of 123 subjects characterized as being mostly women (64.23%), between 18 and 27 years old (48.78%), living in the Metropolitan Area of Porto (60.97%), with an undergraduate level of education (65.85%) who were, at the time, students (43.90%).

Regarding the PF, the collected answers show that the most consumed product category was the anti-virus software (55.66%) and the audio streaming services (44.72%).

Considering the data collected through the survey about the number of individuals that were willing to purchase a specific online digital product under a FP and a PWYW pricing strategy, in order to confirm the H1 hypothesis, which is “The adoption of a PWYW pricing strategy can lead to an increase in revenue for the companies that sell online digital products or services”.

Table 2 shows the size of the two subsamples for each product in this study. Thus, we can see that the number of participants who are willing to purchase a product under a PWYW condition is higher than those who are willing to purchase the same product under a FP condition.

In a preliminary analysis of the data, when analysed the respondents' WTP regarding each product under studied, we were able to perceive some heterogeneity in the respondents' valuations of each product. The distribution of WTP variable and its characteristics are visible in Table 3.

Table 2 Subsample size by pricing strategy

Category	Product	Subsample size	
		FP	PWYW
Music Album	Of the respondent's preference	35	76
Streaming Video	Amazon Prime Video	20	44
Streaming Video	Netflix	35	71
Streaming Video	Other	20	43
Streaming Audio	Spotify	22	68
Streaming Audio	Google Music	10	43
Streaming Audio	Apple Music	10	34
Streaming Audio	Other	7	39
Productivity Software	Microsoft Office	5	71
Productivity Software	Ability	6	32
Productivity Software	Other	2	35
Anti-virus Software	Kaspersky	7	43
Anti-virus Software	Norton	4	46
Anti-virus Software	McAfee	6	51
Anti-virus Software	Other	8	49
E-book	Technical and School Books	44	69
E-book	Fiction	27	47
PC Game	Of the respondent's preference	23	54
Smartphone game	Of the respondent's preference	23	50
Movie	Of the respondent's preference	12	61
Audiobook	Technical and School Books	1	35
Audiobook	Fiction	1	20

Results on Table 4 also show the heterogeneity of the participants' WTP for each product, given by the statistics of Skewness and Kurtosis. In order to confirm if the heterogeneity identified in the respondents' WTP can be justified by the characteristics of our samples or, alternatively, if those variances are not related to the sample itself. In order to do so, we performed tests to the variances of both the WTP under a PWYW strategy and under a FP strategy.

This examination was tested through a normality test to the WTP's distribution. A graphical analysis raised the possibility that those amounts do not follow a normal distribution, so we performed some tests to the skewness—through the Anscombe–Glynn test—and the kurtosis—through the D'Agostino test—of the WTP distributions. Results of these tests, presented in Table 4, confirmed that the WTP distributions do not follow a normal distribution, hence we proceeded with the logarithmic transformation of the WTP distribution.

In a second examination, the skewness and kurtosis tests allowed to confirm that, for the PWYW subsample and for most of the products included in this study, the subjects' WTP distributions possess characteristics of a log-normal distribution. On the other hand, the WTP of FP subsamples do not follow a log-normal for most of the products.



Table 3 Willingness to pay statistical data

Category	Product	Average price	Kurtosis	Skewness
Album Música	Of the respondent's preference	10.15	3.01	1.58
Streaming Video	Amazon Prime Video	7.91	2.56	1.51
Streaming Video	Netflix	9.61	27.33	4.49
Streaming Video	Other	9.53	2.99	1.71
Streaming Audio	Spotify	6.18	30.42	4.79
Streaming Audio	Google Music	4.80	2.23	1.52
Streaming Audio	Apple Music	5.85	3.88	1.90
Streaming Audio	Other	4.46	0.99	1.07
Productivity Software	Microsoft Office	35.86	6.31	2.33
Productivity Software	Ability	20.31	3.31	1.84
Productivity Software	Other	26.86	12.02	3.14
Anti-virus Software	Kaspersky	20.00	5.45	1.89
Anti-virus Software	Norton	19.78	0.61	0.92
Anti-virus Software	McAfee	19.88	1.37	1.25
Anti-virus Software	Other	20.92	-0.50	0.74
E-book	Technical and school books	13.35	1.56	1.27
E-book	Fiction	11.95	13.85	3.14
PC Game	Of the respondent's preference	24.94	-0.12	0.90
Smartphone game	Of the respondent's preference	4.13	5.88	2.19
Movie	Of the respondent's preference	8.20	5.50	1.92
Audiobook	Technical and school books	8.26	4.41	1.77
Audiobook	Fiction	6.33	5.16	2.25

Table 4 Skewness and Kurtosis for the PWYW subsample

Product	Skewness	<i>p</i> value— D'Agostino test	<i>p</i> > 0.05	Kurtosis	<i>p</i> value—Ans- combe–Glynn test	<i>p</i> > 0.05
Music Album	-0.3852892	0.1534	Yes	2.587302	0.5497	Yes
Streaming Video Amazon Prime Video	-0.4152535	0.2254	Yes	2.967646	0.6889	Yes
Streaming Video Netflix	0.06853031	0.8005	Yes	3.563994	0.2119	Yes
Streaming Video Other	-0.1507962	0.6558	Yes	2.950483	0.7054	Yes
Streaming Audio Spotify	0.1825663	0.5195	Yes	3.078409	0.6006	Yes
Streaming Audio Google Music	-0.1421465	0.6804	Yes	2.074288	0.1012	Yes
Streaming Audio Apple Music	-0.00714890	0.9849	Yes	2.256318	0.3869	Yes
Streaming Audio Other	-0.3857157	0.2877	Yes	2.381106	0.5021	Yes
Productivity Software Microsoft Office	-0.1525995	0.5871	Yes	2.7558	0.9133	Yes
Productivity Software Ability	-0.1335685	0.7376	Yes	2.318237	0.5373	Yes
Productivity Software Other	0.2187089	0.5595	Yes	2.501832	0.7386	Yes
Anti-virus Software Kaspersky	-0.537911	0.1332	Yes	2.846655	0.825	Yes
Anti-virus Software Norton	-0.9524543	0.01071	No	3.405872	0.3172	Yes
Anti-virus Software McAfee	0.6675042	0.05136	Yes	2.684711	0.8939	Yes
Anti-virus Software Other	-0.5669499	0.09552	Yes	2.419455	0.4649	Yes
E-book Technical and School Books	-0.5170721	0.07334	Yes	3.168705	0.5018	Yes
E-book Fiction	-0.3008268	0.3652	Yes	4.00787	0.1043	Yes
PC Game	-0.5716803	0.07745	Yes	2.572493	0.6683	Yes
Smartphone game	0.1987626	0.5541	Yes	2.869745	0.81	Yes
Movie	-0.9113749	0.00534	No	6.083838	0.002203	No
Audiobook Technical and School Books	-0.4858201	0.2167	Yes	3.179262	0.4563	Yes
Audiobook Fiction	0.5169571	0.2743	Yes	3.061478	0.4797	Yes



Since the ANOVA test requires that both the control group—in this case, the PWYW subsample—and the test group—the FP subsample—are normally distributed, it was only possible to perform this test for the products “Music Album”, “Video Streaming Service—Amazon Prime”, “Video Streaming Service—Other” and “Audio Streaming Service—Google Music”. The ANOVA test showed that for a 95% significance level there are no differences between the PWYW and FP subsamples. The Levene test performed confirmed our conclusion regarding the homogeneity of the variances.

As shown in Table 5, we can only confirm the H1 hypothesis’ assumptions for the four aforementioned products.

Nevertheless, for the aforementioned products (supported by H1 hypothesis), the results suggest that a PWYW pricing strategy can have a positive effect in the RM of the companies that choose to pursue this strategy, in comparison to those that follow a traditional fixed price approach.

Concerning the proposed hypothesis 2 regarding the amounts paid under a PWYW strategy, we test if the RP of the digital products sold online is greater than our respondents’ WTP. To test this, a confidence interval of 95% was set to the average WTP of each product, using the PWYW subsample. Comparing the intervals—shown in Table 6—with the RP of each product (presented in Table 1), the results

demonstrate that only for the product categories “Audio Streaming Service”, “Productivity Software”, “Anti-virus Software”, “PC Game”, “Movie” and “Audiobook”, the RP is outer of the interval and surpasses the upper limit of the interval. Therefore, the hypothesis 2 is not fully confirmed.

Conclusions

In this study we addressed the research question “Can a PWYW pricing strategy be adequate to be applied to digital products sold online?”. The intrinsic characteristics of this type of products offer this possibility, because digital products have a unique cost structure, as their marginal costs are close to zero and their cost structure is mostly based on fixed costs.

This setting brings an opportunity for higher returns on sales. Despite the existence of free-riders and individual payments lower than the RP, for companies that sell these products is a chance to increase their revenues with the adoption of a PWYW strategy. This apparent paradox is explained by the fact that the adoption of a PWYW strategy allows the companies to increase their customer base, as this pricing strategy attracts new customers, that otherwise would not purchase these products due to budget constraints.

Table 5 Potential revenue by pricing strategy

Category	Product	Total revenue in PWYW (€)	Total Revenue in FP (€)
Music Album	Of the respondent’s preference	771.50	287.35
Streaming Video	Amazon Prime Video	348.00	119.80
Streaming Video	Netflix	681.98	279.65
Streaming Video	Other	410.00	139.80
Streaming Audio	Spotify	420.47	153.78
Streaming Audio	Google Music	206.50	69.90
Streaming Audio	Apple Music	198.99	69.90
Streaming Audio	Other	174.00	48.93
Productivity Software	Microsoft Office	2,546.00	745.00
Productivity Software	Ability	650.00	209.94
Productivity Software	Other	940.00	184.00
Anti-virus Software	Kaspersky	860.00	279.65
Anti-virus Software	Norton	910.00	199.92
Anti-virus Software	McAfee	1,014.00	299.70
Anti-virus Software	Other	1,025.00	373.04
E-book	Technical and School Books	921.49	332.20
E-book	Fiction	561.49	179.82
PC Game	Of the respondent’s preference	1,346.99	531.99
Smartphone game	Of the respondent’s preference	206.50	74.75
Movie	Of the respondent’s preference	500.20	147.72
Audiobook	Technical and School Books	288.99	21.96
Audiobook	Fiction	126.50	23.47



Table 6 Confidence interval

Category	Product	RP (€)	Lower endpoint (€)	Higher endpoint (€)	RP < higher endpoint C.I
Music Album	Of the respondent's preference	8.21	5.34	8.48	True
Streaming Video	Amazon Prime Video	5.99	4.84	7.90	True
Streaming Video	Netflix	7.99	5.95	8.61	True
Streaming Video	Other	6.99	5.56	9.27	True
Streaming Audio	Spotify	6.99	3.68	5.60	False
Streaming Audio	Google Music	6.99	2.64	4.76	False
Streaming Audio	Apple Music	6.99	3.12	5.94	False
Streaming Audio	Other	6.99	2.93	4.80	False
Productivity Software	Microsoft Office	149.00	16.42	28.83	False
Productivity Software	Ability	34.99	8.96	20.95	False
Productivity Software	Other	92.00	11.25	23.65	False
Ani-virus Software	Kaspersky	39.95	10.88	20.12	False
Anti-virus Software	Norton	49.98	11.01	20.23	False
Anti-virus Software	McAfee	49.95	10.13	19.09	False
Anti-virus Software	Other	46.63	10.91	20.11	False
E-book	Technical and School Books	7.55	7.84	12.19	True
E-book	Fiction	6.66	6.61	11.29	True
PC Game	Of the respondent's preference	23.13	12.82	22.79	False
Smartphone game	Of the respondent's preference	3.25	2.99	4.65	True
Movie	Of the respondent's preference	12.31	5.11	7.90	False
Audiobook	Technical and School Books	21.96	4.75	9.25	False
Audiobook	Fiction	23.47	3.32	7.06	False

To test the hypotheses proposed in this study, we conducted a survey using a convenient sample with the purpose of directly inquiring the subjects about their WTP for a set of digital products.

The results allowed to partially confirm that a PWYW strategy, when applied to a set of digital products, has the potential to increase the firm revenue, since the sample's size and characteristics did not allow to statistically validate that hypothesis for part of the products included in the study. Therefore, this theory cannot be excluded and deserves further examination in future research.

Another proposed hypothesis stated that the individual amounts paid under a PWYW setting would be lower than those under a fixed price approach. This hypothesis could not be fully confirmed through the comparison between the MP and the confidence intervals of WTP subsample. Results partially confirmed that the MP is higher than the upper limit of the confidence interval, only for a specific set of products.

The study results provide several contributions and challenges for companies to tackle.

We suggest that PWYW pricing strategy should be considered by the companies' managers, that operate in e-marketplaces, given the potential to increase the company's revenue and the customer-data base. Therefore, could be useful as a proxy link to the market that is difficult

and costly to attract. Additionally, PWYW could act as a mechanism to gather valuable information about the customer, regarding the individual voluntary payment, signaling price sensitive customers or opportunistic buying behaviour. For companies this valuable information could help to target high-valuable market segments more effective and efficiently.

Despite the provided managerial insights, we caution some limitations in generalizing the study results.

The first limitation concerns the size and characteristics of the convenience sample, which introduce bias and restrain the statistical inference of the results.

Secondly, the use of intentional behaviour measures, namely WTP an IP in the inquiry, did not provide data of real consumers buying behaviour. Furthermore, there are countless factors that drive an individual to attribute a specific value to a product and, as Richard Thaler claims, building economic models to describe human behaviour accurately is a challenge of today's behavioural economic theory.

Therefore, we suggest further research using more accurate measures of real purchase behaviour and assessing real customers of e-retailers platforms within a transaction setting.

Also, would be beneficial in future studies to use a highly engaged customer base from a huge online brand community



to test PWYW externalities effects (e.g. if the PWYW value increases as the network expands).

Finally, we encourage academics and managers to deeply examine PWYW strategy, as the online platforms have a great potential for price discrimination set up.

Acknowledgements This work is financed by Portuguese national funds through FCT—Fundação para a Ciência e Tecnologia, under the project UIDB/05422/2020.

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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