

WILLINGNESS TO BUY DIGITAL AND PHYSICAL BOOKS: IMPACT OF PRICE FAIRNESS PERCEPTIONS ON DIFFERENT PRICE LEVELS AND CONTENT OF BOOKS

SPREMNOST NA KUPOVINU DIGITALNIH I FIZIČKIH KNJIGA: UTJECAJ PERCEPCIJE CJENOVNE PRAVEDNOSTI NA RAZLIČITE RAZINE CIJENA I SADRŽAJ KNJIGA

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Abstract

Purpose – This paper aims to explore how consumers perceive price fairness when physical and digital books have different price levels, when they are priced equally, as well as when their content differs and how this affects the intention of consumers to buy and their willingness to pay.

Methodology – Three experiments were conducted with different manipulations of the price level, including discounts and zero price with references to favorite vs. “anonymous” books, and different content.

Findings and implications – The results demonstrate that, when it comes to an increase in price, a higher intention to buy and willingness to pay are attributable to physical to a greater extent than to digital books. The price fairness mediation effect is observed for digital books, leading to the conclusion that consumers are more sensitive to the prices of digital goods from a fairness perspective. Content effects were observed with regard to book purchase decisions: classic books are associated with a higher intention to buy when in physical form.

Limitations – Low procedural price fairness mediation effects could be attributed to small sample sizes. The

Sažetak

Svrha - Rad istražuje kako potrošači percipiraju pravednost cijena kada se cijene fizičkih i digitalnih knjiga razlikuju po različitim razinama, za jednake cijene ili ne, za različit sadržaj te kako to utječe na njihovu namjeru kupovine i spremnost za plaćanje.

Metodološki pristup - Provedena su tri eksperimenta s različitim manipulacijama razinom cijena, popustima, nultom cijenom, poveznicama s omiljenim u odnosu na “anonimne” knjige i različita sadržaja.

Rezultati i implikacije - Rezultati pokazuju da se veća namjera kupovine i spremnosti za plaćanje pri porastu cijena pripisuju fizičkim knjigama u odnosu na digitalne. Učinak medijatorskog utjecaja pravednosti cijena vidljiv je kod digitalnih knjiga, sugerirajući da su potrošači cjenovno osjetljiviji na cijene digitalnih knjiga iz perspektive pravednosti. Prikazan je utjecaj sadržaja pri odlukama o kupovini knjiga: kod knjiga klasičnog sadržaja veća je namjera kupovine u fizičkom obliku.

Ograničenja - Niski medijatorski učinci pravednosti cijena mogu se pripisati malom uzorku istraživanja. Od ispitanika se zahtijevalo da razmisle o svojoj omiljenoj vrsti sadržaja (knjizi) pripisujući joj veću vrijednost bez obzira

setting required respondents to think about their favorite content (book), thus attributing more value to it irrespective of the form, which diminished price fairness perception effects on purchase intention.

Originality – The paper demonstrates the effects of price fairness on consumer intention to buy and willingness to pay for digital as opposed to physical books under different price presentation conditions, in terms of comparisons (one offer vs. both offers) and differences in content (long, classic read vs. short, escapist read).

Keywords - digital and physical books, procedural price fairness, outcome price fairness, intention to buy

na oblik, čime se umanjuju učinci percepcije pravednosti cijena na namjeru kupovine.

Doprinos - Rad prikazuje učinke pravednosti cijena na potrošačevu namjeru kupovine i spremnost plaćanja digitalnih naspram fizičkih knjiga po različitim cjenovnim kriterijima, usporedbi (jedna ponuda u odnosu na obje), sadržaju (dugo, klasično čitanje nasuprot kratkog eskapističkog čitanja).

Ključne riječi - digitalne i fizičke knjige, proceduralna pravednost cijena, ishod pravednosti cijena, namjera kupovine

1. INTRODUCTION

E-books could theoretically become a low-cost and high-reach alternative to printed books. There are no multiplication and delivery costs for e-book copies; payment and transfer of e-books are instant. Many publishers are reluctant when it comes to low-cost e-book alternatives due to other fixed costs incurred in publishing, as well as digital piracy threats and cannibalization effects. The majority of e-books are priced just marginally below their paper equivalents. While sometimes they cost the same, there are cases in which an e-book is more expensive than its printed counterpart. According to figures available, the sales of physical books have increased, whereas those of e-books are decreasing after reaching a peak (Association of American Publishers, 2020), suggesting that there are issues to be explored in terms of the value and price perceptions of e-books.

Researchers are still looking for the reason why sales of e-books, which seemingly offer a great value proposition for consumers and a high potential for publishers, have not overtaken the physical books market. Although the gradual initial increase in e-book sales might be attributable to resistance to innovation, inertia, habits, low technology acceptance, and lack of devices (Lebert, 2009), these reasons cannot explain their decrease. E-books offer convenience in terms of instant purchasing, storage, and portability. However, even digital readers prefer printed books situationally, listing greater experience, ownership, and social bonding as reasons for their acquisition (Helm, Ligon, Stovall & Van Riper, 2018).

When presented with the option of choosing a product in physical as opposed to digital form, consumers demonstrate a preference for the digital. However, when asked to evaluate both offers in terms of willingness to pay, they are much more willing to pay for the physical counterpart (Adnan Shennib, Catapano & Levav,

2019). The asymmetry between the free-of-charge choice and monetary exchange poses challenges in the exploration of the mechanism behind consumer monetary evaluations and intentions to buy based on different presentations of physical and digital goods offers.

Since it is likely that consumers are aware of the costs involved in printing and distributing books in physical form (whereas only marginal costs are incurred in digital multiplication), the issues of price fairness for both formats emerge. While there are material justifications of fairness when it comes to physical books (thickness, cover, other visual cues), digital books stay the same even when their price increases. Ultimately, the levels of intention to buy (ITB) and willingness to pay (WTP) for digital and physical books of the same content should differ. Understanding user barriers towards digital books still calls for scholarly attention (Kim, Seo, Zo & Lee, 2021), with price fairness being one of the explanatory variables to address.

The research problem is: "How do different price levels and price comparisons between digital and physical books, independently of their content, affect perceived price fairness, intention to buy, and willingness to pay?"

This paper aims to explore how perceived price fairness mediates intention to buy and willingness to buy printed and digital books at different price levels and based on price comparisons, irrespective of their content.

Three experiments were conducted using Internet panels. The conditions in the first two experiments contrasted different initial price levels, and equal or different digital and printed book prices. Procedural and outcome price fairness of digital books were observed as mediators for the intention to buy and willingness to pay. The third experiment manipulated perceived content ("long" vs. "short" read), which giving no indication of the price, and tested for ITB and WTP of digital and physical books.

2. FACTORS AFFECTING INTENTION TO BUY AND WILLINGNESS TO PAY FOR DIGITAL AND PHYSICAL BOOKS

Consumer behavior with regard to e-books, as a complex combination of habits, situations, value perceptions of the format and the content, attitudes, and feelings (Atasoý & Morewedge, 2018), is judged against the price of e-books.

From a consumer perspective, two versions of the same title, digital and physical, are not interchangeable. Inherent characteristics of the digital or physical form shape their distinctive value for consumer segments or even the same consumer in different situations (Kannan, 2013). E-books have the advantages of transferability, storage, portability, and instant purchase (Woody, Daniel & Baker, 2010). Digital formats are also easy to store and catalogue; computer users' habits of making notes, clipping, and searching are highly compatible with the benefits provided by e-books. Physical books are associated with more prolonged usage (permanence) and lasting value (Petrelli & Whittaker, 2010), and might be shared or resold. They allow for ritualization and traditional shelf storage, which, due to its visibility, leads to self-extension (Belk, 2013). The senses of touch and smell are evoked when using physical books, thus enhancing the feeling of ownership that correlates with willingness to pay (Adnan Shennib et al., 2019; Helm et al., 2018). Although the comparability of value packages of the digital as opposed to the physical form of a book is complicated, previous evidence leads to the assumption that the physical form is usually associated with higher value (Atasoý & Morewedge, 2018; Helm et al., 2018). Hence, we have formulated the first two hypotheses:

H1A. ITB is lower for digital than for physical forms of books.

H1B. WTP is lower for digital than for physical forms of books.

Consequently, the value of goods, intention to purchase, and prices that consumers are willing to pay are all related to perceived price fairness (Campbell, 1999; Xia, Monroe & Cox, 2004). Price ranges on the book market increase the latitude of acceptance for a particular book price (Kalyanaram & Winer, 1995). Thus, the intention to purchase or pay at the listed price might be related to the effect of price fairness. Increasing the listed price (as an indicator of value) should affect price fairness and increase a discrepancy between the perceptions of price fairness for physical and digital books. Whereas higher costs of physical books are justified due to their volume, cover, and the possibility to return partial value through resale, the digital form of books remains the same from all these perspectives at different price levels:

H2A. With an increase in the listed price, the difference between WTP for the digital and the physical form of books increases.

H2B. With an increase in the listed price, the difference between ITB for the digital and the physical book increases.

Furthermore, perceived price fairness is dimensionalized into procedural price fairness and outcome (distributive) price fairness (Herrmann, Xia, Monroe & Huber, 2007; Maxwell, 2002).

While evaluating perceived outcome price fairness (OPF), the consumer judges the value attributes of the offer, adequacy with respect to price expectations, and equality to other consumers (Herrmann et al., 2007). Judgments are made in relation to comparable past or current offers in the market, that is, to a reference price (Gielissen, Dutilh & Graafland, 2008; Kalyanaram & Winer, 1995). A good price match is twofold in the book market since it has two reference points – distant and close. There is a range of prices for a particular genre in which offers for new books are available. The difference in the prices of books of the same genre could be more than double, with discounts and other promotions adding to variations. Although consumers might know the reasonable price range

for fiction, technical, or recipe books (whether physical or digital), the comparability of items is difficult due to each book's unique content. Still, a price increase is likely to lower the outcome price fairness of an item that is not available in physical form. Thus:

H3A. OPF for the digital form decreases with an increase in listed prices.

H3B. OPF for the digital form mediates ITB and WTP with an increase in listed prices.

H3C. OPF for the digital form mediates differences between ITB and WTP for digital and physical books with an increase in listed prices.

The price fairness of a digital book is judged by the price listed for its physical counterpart, which becomes the most evident reference price. When comparing the price of a book in digital form to that of a physical book, consumers evaluate price difference as gain or loss, which adds to the value perception (Niedrich, Sharma & Wedell, 2001); thus, a discounted digital book should be taken as an option which is more fair. If consumers perceive the value of the book's physical and digital form as different, but they are listed at the same price, differences will be observed in their intention to buy at the listed price and a price that they would be willing to pay. This effect should be caused by the different perception of outcome price fairness. Hence, we hypothesize as follows:

H4A. WTP and ITB for the digital form will be higher when the digital form is priced lower than its physical counterpart.

H4B. OPF for the digital form will be higher when the digital form is priced lower than its physical counterpart.

H4C. Increased OPF mediates ITB and WTP for the digital form when it is priced lower than its physical counterpart.

Perceived costs incurred in the production, distribution, and marketing of a product (Bolton, Warlop & Alba, 2003) are related to the judg-

ment of price fairness. Consumers seldom make reasonable evaluations of the producer's costs, primarily when these are related to turnover volatility, risk management, and trade-offs between scale and margins. However, they still apply the oversimplified formula of costs plus "fair" margins to determine whether the final price is fair (Bolton et al., 2003). This type of perceived fairness refers to *procedural price fairness (PPF)*: as long as costs are covered, and the producer does not exploit the consumer by charging margins above reasonable profit, the procedure seems "fair". As Kahneman, Knetsch, and Thaler (1986) note, people apply *naïve accounting* and, following the rule of dual entitlement, form the judgement that over-profit potentially comes from an overstated price, violating the principle of the fair market.

Consumers are more likely to associate price fairness with quality and an increase in costs, especially when the costs are directly attributable to the item (Bolton & Alba, 2006). While the physical copy of a book is associated with printing costs and distribution, the book's digital form is not clearly understood by the consumer. The absence of material form, costless multiplication, and the download process create the perception that a digital book's price should be lower. In the publishing of digital books, fixed costs are incurred to support software, the marketing and sales system, and copyright protection. However, consumers cannot comprehend these fully and tend to associate them to perceived price fairness (Bolton et al., 2003; Bolton & Alba, 2006). Price (un)fairness has been identified as a factor in digital piracy: one of the justifications for illegal downloading is perceived non-correlation of an item with its costs (Kukla-Gryz, Tyrowicz & Krawczyk, 2021). Adding these arguments to those stated previously, the PPF for a digital book could be higher at a lower price range or under lower price comparisons. Similarly, PPF will mediate ITB and WTP for digital books.

H5A. The digital form's PPF will decrease with an increase in the price.

H5B. The digital form's PPF mediates ITB and WTP for the book's digital form with an increase in the price.

H6A. The digital form's PPF will be higher when the digital form is priced lower than its physical counterpart.

H6B. Increased PPF mediates ITB and WTP for the digital form when it is priced lower than its physical counterpart.

Identity relevance affects willingness to pay for the e-book (Atasoy & Morewedge, 2018). Content is strongly associated with the reader's identity and serves as a cue to peer interests, social strata, intellectual capital, etc. Thus, classic, well-established long reads could be more valuable in physical than in digital form due to signaling qualities and value perseverance. This should be reflected in ITB and WTP.

H7. The difference in WTP between the physical and digital form increases when a book is of classic, "long" content (compared to the escapist "short" content).

3. HYPOTHESES TESTING

Three experiments were conducted. Experiment 1 tested for the differences in price fairness for the book's digital form, which was listed at the same price as its physical counterpart, by increasing the price range, as well as the effects on ITB and WTP. In Experiment 2, price fairness of the digital form, ITB, and WTP were tested for high- and low-priced books by making the digital book's price equivalent to that of the physical and by discounting it by 20 per cent. In Experiment 3, manipulations were removed from the price cue. Instead, a content cue was anchored and the effects of WTP and ITB for physical or digital forms of books were tested.

3.1. Experiment 1: Price range effect on price fairness, WTP, and ITB of digital books

3.1.1. Methodology

93 participants of a Prolific panel from the United Kingdom (67 women, $M_{age}=36.78$, $SD_{age}=11.53$) were asked to imagine the listing of a recent book by their favorite author. Next, they were told that this book was given to them in physical form for a randomly selected price (ranging from 0 to 50 GBP) and that the digital version of the book has the same price as the printed one. After the anchors (forms and their equal prices) were established, the respondents evaluated procedural and outcome price fairness for the book's digital version, as well as WTP and ITB for both forms. This allowed for the extraction of a derivative measure, the difference between WTP and ITB for physical and digital books, and monitoring whether the variable changed depending on price range and price fairness perceptions.

Measures of price fairness are provided in Table 1. It should be noted that the literature does not provide uniform dimensionalized price fairness measures. Items were collected from previous research, adapted, and distributed between dimensions following the definitions of procedures perceived as fair vs. perceived fair outcome for the consumer. From an outcome justice perspective, the statements provided capture equality in relation to market offers, adequacy with respect to expectations, and a general feeling of fairness as an outcome. Procedural price fairness included statements about fair procedures concerning costs and margins, but not regarding the consumer's ability to pay. Together, they form the composite measure of price fairness.

TABLE 1: Measures of price fairness

Perceived outcome price fairness	(1.1) The price is good value for money compared to other offers in the market. (1.2) The price meets my expectations. (1.3) This is exactly the price I would expect to pay. (1.4) I think it would be fair if I would pay this price.
Perceived procedural price fairness	(2.1) I think the price of this offer is based on the publisher's and seller's cost. (2.2) I think the price of the offer does not benefit from my ability to pay. (2.3) I think the price represents the quality of an offer. (2.4) I think publishers and sellers apply reasonable margins.

Measures of price fairness adapted from Herrmann et al. (2007), Maxwell (2002), Babin, Hardesty, and Suter (2003). Measured on a 7-point Likert scale, 1 – strongly agree, 7 – strongly disagree; the data was reversed: increase in the domain signals more fairness.

ITB for the different forms of books was measured using the following statement: "If I needed this book, I would buy the digital/physical form of the book for the presented price." (7-point Likert scale, 1 – strongly disagree, 7 – strongly agree in the first experiment, with a comparable 5-point scale in the second experiment). WTP was measured by asking the respondents to list a price: "Imagine that you had to pay for this book. How much would you be willing to pay for the digital/physical form of the book?"

3.1.2. Results

Reliability of the measures

Cronbach's alphas were estimated for the outcome and procedural fairness. One item (No. 2.2) deteriorating the overall construct's consistency in the procedural fairness domain was removed. A discriminant validity test demonstrated that factors do not load on separate fairness dimensions sufficiently. Therefore, a generalized variable of price fairness, General price fairness, was created and included in the analysis in addition to the dimensionalized measures.

Convergence of the measures is attributable to consumer subjectivity and lack of knowledge. Pricing process rules might not be judged as separate by consumers since un(fair) outcome is related to the (un)fair process of pricing (Maxwell, 2002), constituting one price (un)fairness dimension.

TABLE 2: Descriptives and reliability coefficients of the measures

Type of price fairness	Number of items	Cronbach's alpha	Mean	SD
Outcome price fairness	4	0.96	2.62	1.53
Procedural price fairness	3	0.77	3.43	1.38
General price fairness	7	0.90	2.96	1.31

Results

First, ITB and WTP were compared for digital as opposed to physical books.

Table 3: Means, standard deviations, and comparisons of purchase-related intentions for digital vs. physical books – Experiment 1

Purchase-related intentions	Mean	SD	t-test	Sig.
WTP of the digital form	9.77	7.36	9.97	p<0.001
WTP of the physical form	16.50	11.06		
WTP difference physical vs. digital	6.73	5.91	-	-
ITB of the digital form	2.40	1.55	2.52	p=0.012
ITB of the physical form	5.37	1.68		
ITB difference physical vs. digital	2.97	2.26	-	-

*Significant at 0.05 level; **significant at 0.01 level,

As expected, WTP and ITB for digital books were lower, thus confirming H1A and H1B.

The initial randomized price in the given range had several significant effects on willingness to pay and intention to buy books, as well as perceived price fairness.

was established for ITB in relation to the book's digital form ($F(1, 91)=15.457, p<0.001; \eta^2=.146, \beta=-0.039$) and ITB in relation to its physical form ($F(1, 91)=9.252, p<0.005; \eta^2=0.092, \beta=-0.033$), with a lower initial price leading to higher ITB for both forms of the book. A significant price range

TABLE 4: Initial price range (0–50 GBP) effects on digital and physical forms

Main effects	F	Sig.	B	η^2
WTP of the digital form	50.33	0.000***	0.288	0.356
WTP of the physical form	47.90	0.000***	0.426	0.345
WTP difference physical vs. digital	13.18	0.000***	0.138	0.127
ITB of the digital form	15.55	0.000***	-0.039	0.145
ITB of the physical form	9.25	0.003**	-0.033	0.092
ITB difference physical vs. digital	0.12	0.733ns	0.005	0.001
Perceived outcome price fairness of digital form	38.18	0.000***	-0.055	0.296
Perceived procedural price fairness of digital form	2.11	0.150ns	-0.014	0.023
Perceived general price fairness of digital form	20.64	0.000***	-0.037	0.185

Initial price range (0–50 GBP) effects on WTP and ITB for the books and price fairness perceptions. Results of F-test (DF=91): ns - $p>0.05$; * - $p\leq 0.05$; ** - $p\leq 0.01$; *** $p\leq 0.001$

Price range had a significant impact on WTP for the digital form ($F(1, 91)=50.328, p<.001; \eta^2=0.356$) and WTP for the physical form ($F(1, 91)= 47.90, p<.001; \eta^2=0.345$). When the initial price was higher, participants were willing to pay more for the book's digital or physical form. The listed price served as a primer value anchor for the offer. A reverse effect of the initial price

effect was found for the WTP_{difference} between two types of books ($F(1, 91)=13.184, p<0.001; \eta^2=0.127$): when the price increases, people are willing to pay more for the physical than for the digital book (with the difference between them increasing too). Thus, H2A is confirmed. However, as no significant effects on ITB_{difference} were discovered, H2B is rejected. Although there was

no effect of the price range increase on the difference between ITB for the digital form and its physical counterpart, it should be noted that this variable had very low variation.

As theorized, the initial random price within a given range had a significant, main negative effect ($F(1, 91)=38.181, p<0.001; \eta^2=0.296, \beta<0$) on perceived OPF of the digital form. However, perceived PPF showed no response to the price increase ($F(1, 91)=2.66, p=0.15, \eta^2=0.023$). The general feeling of price fairness reacted negatively to the price increase ($F(1, 91)=20.64, p<0.001, \eta^2=.185, \beta<0$). Therefore, H3A is confirmed and H5A is rejected.

Mediation analysis was conducted, testing whether perceived OPF for the digital book would mediate ITB and WTP for the digital book, as well as the difference between digital and physical. Hayes (2012) recommended that confidence intervals (CI) using 5,000 bootstrap iterations be examined.

The same trend was observed for the general fairness dimension: when the initial price was reduced, OPF increased and negatively impacted WTP for the digital book ($-0.07, 95\% \text{ CI } [-0.12, -0.03]$). Once the feeling of price (un)fairness emerges, willingness to pay reduces. Therefore, H3B is confirmed and H3C rejected.

Since there was no significant price increase effect on PPF, its mediation in terms of ITB and WTP was not tested. H5B is thus rejected.

The nil effect of PPF on purchase-related intentions under price increase is surprising. It was expected that consumers would react to the seemingly costless multiplication of digital books more explicitly, demonstrating lower PPF and relating it to significantly lower ITB and WTP. Value for the consumer acts as a more influential factor in their decision to buy digital books.

The first experiment lacked a simulation representing active sellers' price-setting proce-

TABLE 5: Price fairness mediation in terms of WTP and ITB

Mediator	Dependent variable	Mediation effects	
		Indirect effect	95% CI
Outcome price fairness of the digital form	ITB _(digital form)	-0.03	[-0.05, -0.01]
	ITB _(physical form)	no mediation	
	ITB _(difference)	no mediation	
	WTP _(digital form)	-0.09	[-0.14, -0.04]
	WTP _(physical form)	-0.08	[-0.15, -0.02]
	WTP _(difference)	no mediation	
General price fairness of the digital form	ITB _(digital form)	-0.02	[-0.04, -0.01]
	ITB _(physical form)	no mediation	
	ITB _(difference)	no mediation	
	WTP _(digital form)	-0.07	[-0.12, -0.03]
	WTP _(physical form)	-0.06	[-0.12, -0.01]
	WTP _(difference)	no mediation	

Perceived OPF mediated both WTP for the digital form ($-0.09, 95\% \text{ CI } [-0.14, -0.04]$) and ITB for the digital form ($-0.03, 95\% \text{ CI } [-0.05, -0.01]$), while not proving to be significant for ITB difference.

dures (presentation of both offers simultaneously). Thus, the second experiment was modelled to address a real-life presentation of books.

3.2. Experiment 2: Effect of price level and price comparison on price fairness perceptions, ITB, and WTP for digital books

The second experiment aimed to explore price fairness when it comes to different-level initial price offers for books, present the price difference between physical and digital books, and its effect on ITB and WTP.

3.2.1. Methodology

A 2x2 (price level x price difference for the digital book) between-subject experiment was conducted on 168 Amazon Mechanical Turk’s US workers (67 women, $M_{age}=41.53$, $SD_{age}=10.05$).

Books were presented visually as “a recent book by your favorite author” in the manner in which they are typically sold online, with the price of the physical and digital form listed nearby for the title. The price level manipulations were USD 5 (low price) and USD 20 (high price) for the printed book. The price difference factor manipulations consisted in applying equal prices for both books and applying a 20% reduction

on the digital book, that is, USD 5 vs. USD 4 or USD 20 vs. USD 16. Measures were equivalent to the previous experiment.

3.2.2. Results

Again, item No. 2.2 was removed from the PPF measurement. The reliability coefficients of measures were similar to those in Experiment 1 and above the required threshold.

TABLE 6: Reliability statistics for price fairness measures

Type of price fairness	Number of items	Cronbach’s alpha
Outcome price fairness	4	0.93
Procedural price fairness	3	0.79
General price fairness	7	0.92

Mean differences in WTP and ITB for digital books did not reveal as many main effects as expected.

TABLE 7: Mean differences in ITB and WTP across groups

Main effects	Factors and levels	Mean	SD	F	Sig	η^2
WTP _(digital)	High price	9.80	5.01	71.962	0.000***	.305
	Low price	4.24	3.23			
	Digital price lower than physical	6.90	4.99	0.133	0.716	.001
	Digital price equal to physical	7.26	5.14			
	Price level * price difference			0.429	0.513	.003
WTP _(difference)	High price	4.88	5.95	19.943	0.000***	.108
	Low price	1.71	2.34			
	Digital price lower than physical	3.03	4.49	0.503	0.479	.003
	Digital price equal to physical	3.62	5.12			
	Price level * price difference			1.503	0.222	.009
ITB _(digital)	High price	2.78	1.30	7.479	0.007**	.044
	Low price	3.34	1.34			
	Digital price lower than physical	3.26	1.29	3.584	0.060	.021
	Digital price equal to physical	2.86	1.37			
	Price level * price difference			0.074	0.787	.000
ITB _(difference)	High price	0.48	1.99	0.105	0.747	.001
	Low price	0.36	2.30			
	Digital price lower than physical	0.16	2.09	2.240	0.136	.014
	Digital price equal to physical	0.66	2.17			
	Price level * price difference			0.068	0.794	.000

Results of the F-test (DF=164). Ns p>0.05; * p≤0.05; ** p≤0.01; *** p≤0.001

Lower prices led to higher intentions to buy the digital book. However, the price difference in the initial offer did not produce a larger difference in the purchase of the physical and the digital book. Although not resulting a major finding per se, this experiment provided another insight: when consumers are primed with a higher price, their willingness to pay for the digital book increases. Also, this boosts the

difference between the physical and the digital book's WTP: a higher price increases WTP for the digital book and impacts WTP for its physical counterpart in a non-linear manner.

H2A is again confirmed, with support also found for H2B. People are more willing to buy and pay higher prices for printed books when their price increases. Moreover, the effects are not parallel

– higher prices also boost the difference in willingness to pay and intention to buy between the two forms.

No significant effects of the cheaper digital book / equal price scenarios were observed for ITB and WTP. H4A is thus rejected. The discounted price for the digital book did not produce different results from those in equal price scenarios.

Although manipulations of experimental conditions led to minor differences in intention to buy digital books, a deeper analysis of price fairness dimensions demonstrates that the conditions produced significant results in their perceptions.

A higher initial price resulted in lower fairness dimensions. Thus, H3A is again confirmed, with support also found for H5A. When the digital book is priced lower than its physical counterpart, price fairness increases significantly. H4B and H6A are confirmed. For one dimension, namely OPF, a lower price offer and a lower price of the digital book compared to the physical one produced significant interaction effects ($F(1, 164)=7.304$ $p<.01$; $\eta_p^2= 0.43$). In this study, differences in PPF at a different price range become significant ($F(1, 164)=51.588$, $p=.000$; $\eta_p^2=0.239$). Also, PPF is expressed more evidently when the digital book is priced lower than its physical counterpart ($F(1, 164)=8.350$, $p=.004$;

TABLE 8: Mean differences across experimental groups

Dependent variable	Factors and levels	Mean	SD	F	Sig	η^2
Outcome price fairness	High price	3.24	1.49	16.39	0.000***	0.09
	Low price	4.81	1.38			
	Digital price lower than physical	4.34	1.59	10.44	0.001**	0.06
	Digital price equal to physical	3.68	1.62			
	Price level * price difference			7.30	0.008*	0.04
Procedural price fairness	High price	3.66	1.28	51.59	0.000***	0.24
	Low price	4.42	1.28			
	Digital price lower than physical	4.35	1.44	8.35	0.004**	0.05
	Digital price equal to physical	3.73	1.15			
	Price level * price difference			1.39	0.240	0.01
General price fairness	High price	3.42	1.29	41.64	0.000***	0.20
	Low price	4.64	1.24			
	Digital price lower than physical	4.34	1.45	10.78	0.001**	0.06
	Digital price equal to physical	3.70	1.30			
	Price level * price difference			3.74	0.055	0.02

High vs. low initial price offer; Digital book priced lower than physical book vs. equally priced books. Results of the F-test (DF=164). Ns $p>0.05$; * $p\leq 0.05$; ** $p\leq 0.01$; *** $p\leq 0.001$

$\eta_p^2=0.048$). Realistic book price comparisons could help to reveal effects on procedural price fairness in these experiments.

Similarly to the first experiment, mediation analysis was conducted to test whether the digital book’s observed OPF and PPF would mediate WTP and ITB under different price level scenarios. Since no significant effects of equal as opposed to cheaper digital book scenarios on WTP and ITB were established, the effect of this condition was not tested for price fairness mediation (H4C and H6B are rejected).

tention to buy a book’s digital form is mediated by outcome price fairness. H3B is confirmed.

Higher PPF (rather than OPF) of a digital book could be expected to play a role in terms of willingness to pay and intention to buy. This expectation is based on research on the piracy of digital books, which provides the argument that one of the reasons why people download illegally is their perception of the sellers’ advantage of digital book pricing (Kukla-Gryz et al., 2021). The two experiments show that price fairness perceptions based on the sellers’ procedures effect ITB less in

TABLE 9: Mediation results for Experiment 2

Perceived price fairness dimension	Dependent variable	Mediation effects		
		Indirect effect	95% CI	
Outcome price fairness	WTP _(digital form)	-0.75	-1.54	-0.02
	WTP _(difference)	no mediation		
	ITB _(digital form)	-0.59	-0.88	-0.35
Procedural price fairness	WTP _(digital form)	no mediation		
	WTP _(difference)	no mediation		
	ITB _(digital form)	-0.21	-0.39	-0.07
General price fairness	WTP _(digital form)	no mediation		
	WTP _(difference)	no mediation		
	ITB _(digital form)	-0.49	-0.74	-0.27

The indirect effect through perceived fairness dimensions on intention to purchase the digital book and the difference between intentions to purchase the physical and digital book are evident for all price fairness dimensions. A lower price boosts perceived fairness and leads to intention to buy the digital book. OPF also mediates WTP for digital books. Thus, even though a higher initial price primes respondents for higher WTP, when the feeling of outcome unfairness emerges, the effects diminish. This finding was consistent with findings of Experiment 1: the in-

real-life settings. Fairness is driven mainly by the outcome value – to what extent the price is fair for a consumer in their judgement.

The limitation of the previous study was attempted to be removed by comparing offers in a real-life setting. Still, reference was made to the “book by your favorite author”, which allowed for greater involvement of the respondents but could exaggerate WTP or ITB at the same time. Experiment 3 was aimed to explore whether the price “cue” drives WTP differences, so no price cues were present.

3.3. Experiment 3: Effect of content and missing price reference on WTP and ITB of books

The previous experiments relied on initial price cues and tested differences between intentions to buy and willingness to pay for digital as opposed to physical books at different price ranges. Although price presentation conveys real-life situations, price-related priming affects perceived value. If the price cue is removed or the goods are presented at zero price value, perceptions of different goods are equalized (Shampanier, Mazar & Ariely, 2007), unless they hold strong intrinsic values expressed in monetary estimations in the consumer's mind. If the digital or physical form has a default value encoded in the form, this will be evident in zero price priming. The content cues and testing for ITB and WTP for digital and physical forms will explore content-based value since only price was manipulated in previous experiments.

The content of fiction books might be differentiated into serious, classic, valuable content ("long read"), which consequently has a potentially higher value for the physical form, while quick, relaxing escapism with content that is not considered valuable for intelligence or erudition ("quick read") thus does not require lasting form: only significant content matters and determines the value.

It was assumed that consumer WTP for the digital or physical book would differ depending on the book content.

3.3.1. Methodology

A Prolific panel of 308 participants from the United Kingdom (255 women, $M_{age}=48.34$, $SD_{age}=9.08$) was split into two groups according to different initial content cues ("long" vs. "short" read); it was then multiplied by two groups depending on the form of the book being presented (digital vs. physical).

The description of the long read was as follows: "Think about the book you would consider purchasing for a serious, longer and attention-re-

quiring read, for example, classics such as 'War and Peace' by Leo Tolstoy, F. Scott Fitzgerald's 'The Great Gatsby', the biography of Winston Churchill or Vincent van Gogh, or historical or scientific books according to your interests. Please enter the author (if possible) and the title of such book that is under your consideration. _____" The short-read description said: "Think about the book you would consider purchasing when it comes to fiction works such as Stephenie Meyer's 'Twilight', thrillers such as 'The Da Vinci Code' by Dan Brown, fantasy such as 'The Hitchhiker's Guide to the Galaxy', and romance by Nora Roberts, according to your interests. Please enter the author (if possible) and the title of such book that is under your consideration. _____"

After the title under consideration was entered, the software recognized the title automatically. As in the previous experiment, participants were told that they were given a physical or digital book. However, this time the price cue was eliminated by asking the participants to imagine that the book was free of charge. After establishing this condition, participants were asked how much they would be willing to pay for both forms of the book (physical and digital).

3.3.2. Results

WTP for books was examined in a 2 (content type: long, short) \times 2 (form provided free of charge: digital, physical) between-subjects analysis of variance (ANOVA). The WTP difference between forms ($M_{wtp\ difference}=4.4383$, $SD_{wtp\ difference}=3.64722$) was calculated as ($WTP_{difference} = WTP_{for\ physical} - WTP_{for\ digital}$).

The form of the book did not significantly affect the WTP_{difference}, with no significant main effect of the free book's WTP_{for the digital version} or WTP_{for physical} established either. Since the lack of price cue eliminates differences in WTP, WTP does not differ for digital or physical forms if the price reference is removed.

Only content (long/short) revealed significant effects on WTP_{difference} ($F(1, 304)=6.45$, $p=0.012$;

$\eta_p^2 = 0.021$). A significant main effect of content on WTP for the physical form was evident ($F(1, 304) = 6.69$, $p = .01$; $\eta_p^2 = 0.02$), with respondents begin willing to pay more for the long content ($M = 9.13$, $SD = 4.62$) than for the short content ($M = 7.74$, $SD = 4.78$).

Even though form exhibited no significant main effect when it comes to WTP for the physical form, the interaction between received form and content was significant ($F(1, 304) = 4.08$, $p = .04$; $\eta_p^2 = 0.01$). Simple contrasting revealed that respondents were willing to pay more for a long-content physical book if they received the same book in digital form ($M = 9.88$, $SD = 4.85$), and less for a short physical book if they received the same book in digital form ($M = 7.43$, $SD = 3.36$). Therefore, the participants were willing to pay more for the longer content presented in physical form if they received the digital form for free.

Both offers, for the physical and digital book, are interrelated – consumers that received digital long-content books were willing to pay more for their physical counterparts. Also, the valuations for both forms proved dependent on cues, such as potential content (and price reference, as demonstrated by previous experiments). Thus, H7 is confirmed.

As in the first experiment, a limitation could be the anchor in relation to the respondent's current consideration of the book. Still, this allowed the study to capture differences in book types, assuming a higher respondents' involvement when their consideration is addressed.

4. DISCUSSION AND CONCLUSIONS

The paper aimed to explore under which price level conditions consumers treat procedural and outcome price fairness of digital books and how they relate to a willingness to buy or intention to purchase the book's digital form. Different content was taken into account too. Although the willingness to pay less for e-books had been

established earlier (Atasoy & Morewedge, 2018), this study introduced price fairness concepts at different price ranges to the discussion.

The study demonstrated that the perception of digital book's price (un)fairness is more related to an outcome than to the procedure of how the publisher sets the price of the digital form. The perceived value of the form's outcome has a stronger effect on the willingness to buy and intention to pay. The difference between willingness to pay for the same physical or digital form of the book increases with its price range: the higher the book's price, the more valuable the physical version of the book seems to be when compared to the digital book. Thus, the book's price increase in real-life settings should be associated with the tangibility of an item; physical (printed) books have more scope for a price increase than their digital counterparts.

The results concerning the price range and comparisons of physical and digital forms of books in terms of procedural price fairness were controversial in the two experiments. The first experiment showed no effect on procedural price fairness for a linearly increasing price range. The second experiment showed that procedural price fairness is significant under the conditions of a price increase of book offer and a more affordable digital book (compared to its physical counterpart). This experiment included a visualization of price offers similar to real-life settings; therefore, the differences could be the product of methodologies. Evidence that consumers do not make judgements about price fairness based on costs and fair margins was provided in other works (Kahneman et al., 1986), and explained through producer or distributor savings effectiveness or cost inputs that are justified by business actions. Although in the case of books the perceived costs attached to physical as opposed to digital items were expected to be taken into consideration, only one experiment proved this assumption; further analyses are required to establish whether, and under which conditions, procedural price fairness is an issue when comparing digital and physical books.

The mediation of outcome price fairness in relation to the intention to buy digital books was more robust than that of procedural price fairness, demonstrating that consumers consider the value for themselves and equality with other consumers or offer to be a more important factor when purchasing e-books. The theoretical implication is far-reaching, proving that theoretical research on digital forms should create new value concepts and focus less on cost-optimization motivation.

The outcome price (un)fairness of a digital book, when compared to that of its physical counterpart, might be related not only to habits and material expression but also to the feeling of ownership and the extended self, as values that are not associated with digital goods (Atasoy & Morewedge, 2018; Belk, 2013; Helm et al., 2018).

The lower price should compensate for this perceived reduction in values. Alternatively, communication may benefit from the results: as procedural price fairness mediation is weaker (or even nil) in comparison to outcome price fairness, the seller must work on the value presentation more than the reasoning of the costs.

This research study showed that the price of the physical book is used as a point of reference when judging procedural price fairness of the digital form. Thus, e-books should either be more affordable than their physical equivalent or all links to the physical book should be avoided. Presenting the book in its different forms under the same listing for the same price implies their interchangeability but creates less price fairness. Although lower price fairness has not proven to affect willingness to pay or intention to buy directly, evident indirect effects should be considered.

Price anchors are valuable for both forms. The higher initial price for the digital book led to a higher willingness to pay for both digital and physical books, thus confirming that the initial offer serves as a primer in product valuations. This expands the findings of Bassellier and Ramaprasad (2018), who demonstrated that

price-related priming has an impact on physical books, as our experiment showed that priming also cross-loads on comparable physical offers. Synergy rather than cannibalization of digital and physical offers had been indicated by Cremer and Loebbecke (2021) too: the offer of a digital book in addition to a physical book does not diminish the effect of scarcity messages for the physical version. More significant effects (as concluded from the experiments) are achieved when books have both versions, and their dual presentation with different prices serves as value framing.

Apart from the price cue, content also drives the value of the form of a book. The book's physical form is seen as more valuable when it has long/classic content and customers are willing to pay more for the long-content physical version even if they receive the digital form for free. Consumers demonstrate a higher intention to buy when it comes to physical, more stable, and prevalent versions of content recognized as value-maintaining. The result could be attributed to endowment desire, mainly if the book is associated with identity (Morewedge & Giblin, 2015).

Limitations of the research are related to measures of price fairness, with dimensionality being low. For digital books, quality judgements are uncertain since various cues, such as familiarity with the author, genre, the physical counterpart, other users' reported activity, category, image, etc. all interact with each other (Ding, 2020). Thus, consumers cannot relate quality and costs or differentiate fairness in the pricing process of the outcome. Complexity does not necessarily represent linear material quality / price increase, as is usually the case for physical goods, and would explain weak discriminant validity of the dimensional price fairness construct.

Future research should be aimed at exploring the drivers of digital book value and test the provision of digital e-books as a separate offer. Moreover, it should address values or price elements that could be enhanced and communicated for e-books in order to increase their

perceived price fairness and purchase-related intentions. Other issues worth exploring are price fairness perceptions and outcomes for dif-

ferent forms of books, which could be altered situationally, for example, purchasing for personal usage or as a gift (Kannan, 2013).

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