

**The Role of External Reference Price in Pay-What-You-Want Pricing:
The Application of Nudge Theory**

by

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Submitted in partial fulfillment of the requirements

for the degree of Master of Science

at

Dalhousie University

Halifax, Nova Scotia

March 2023

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ABSTRACT

I explore the role of external reference price in Pay-What-You-Want (PWYW) pricing and the application of Nudge Theory to influence consumer behavior. The literature on PWYW pricing has primarily focused on the use of anchors (e.g., suggested price) as external reference prices to influence payments. However, these anchors can lead to lower payments. This research aims to provide evidence that using a nudge instead of anchors can be effective. Two experiments were conducted to test the impact of a pricing order nudge on consumers' perceived external reference price and willingness to pay within a PWYW context. The results did not support that using the order of price presentation as a nudge can influence consumers' perceived external reference price, however, I identified that individuals with high levels of NFCC displayed a more favorable attitude towards the PWYW option in the ascending pricing order condition compared to the descending pricing order condition.

ACKNOWLEDGMENT

This thesis will never be presented here without the full support from my supervisors, committee members, faculty, and colleagues at Dalhousie University.

I would like to express my profound gratitude to my supervisors, Dr. Mohammed El Hazzouri and Dr. H el ene Deval. Their invaluable guidance, steadfast encouragement, and exemplary mentorship have provided a strong foundation for my academic and professional growth. As outstanding researchers and professors, they have set a high standard that I strive to emulate. Though I will no longer be just a few steps away from their advice and insights, I am confident that our collaboration and relationship will continue to flourish.

I would also like to extend my heartfelt appreciation to my committee members, Dr. Justin McManus and Dr. Philippe Mongeon. Dr. McManus has consistently guided me, including the pivotal choice to pursue my master's degree at Dalhousie University. Dr. Mongeon has generously shared his expertise in advanced methodologies, and his unwavering passion for research continues to inspire me.

I am grateful to Dr. Hamed Aghakhani and Dr. Kyung Young Lee for their unwavering assistance and encouragement whenever I needed it.

I would also like to express my heartfelt gratitude to my family—Lin Ling, Chunbao Xu, and Si Chen—for their patience and understanding during my most stressful moments. Your unwavering love and support have been a constant source of strength, and I am committed to managing my emotions more effectively in the future!

CHAPTER 1 INTRODUCTION

Companies are always trying to differentiate themselves from competitors. Among the effort they put into creating a unique business profile, pricing strategy is one of the critical components of marketing strategies that are given equal attention than other domains like products and promotions (Walker, 2011). As Tellis (1986) discussed, companies have various pricing strategies to pursue. For example, using dynamic pricing to adjust prices in real time based on factors of customer behavior or offering multiple products or services together as a package deal, often at a lower price than if each item were purchased separately. In later research, with the development of prospect theory and behavioral economics, researchers began to discuss that consumers' reactions to different pricing strategies may not be purely rational but rather driven by different factors, such as perceptions and preferences (e.g., Kim et al., 2009). For example, Gourville and Soman (2002) examined how consumers' perceptions of prices can be influenced by various psychological factors, such as reference prices, framing effects, and mental accounting. From this point of view, an innovative pricing strategy might also be an opportunity for companies to stand out in the market.

This thesis primarily revolves around participative pricing mechanisms, which represent an innovative pricing strategy. Through the advent of the "name your own price" (NYOP) and "pay what you want" (PWYW) models, consumers can actively participate in the process of determining the price. These participative pricing strategies offer a dynamic pricing mechanism that accommodates the varying needs and preferences of different consumers. Empirical studies demonstrate that participative pricing strategies tend to attract more consumers compared to regular discount promotions (Kim,

Kaufmann, et al., 2014). Notably, the PWYW pricing scheme provides consumers with unparalleled control over the final payment. Consumers have the right to pay any amount including zero and the seller cannot reject it, unlike any other participative pricing strategy (Kim et al., 2009).

PWYW literature focuses on how to influence consumers' payment to minimize the risk. Broadly, the literature focuses on the role of external reference price (ERP) retailer-supplied comparative prices that consumers use to compare the offered price of a product/service. As the literature suggests, the existence of an external reference price will lead to higher payment under PWYW (Kim, Natter, et al., 2014). There also exist different forms of ERP under PWYW, for instance, set maximum, minimum price, and suggested price, as ERP has a significant impact on consumers' final payment (Johnson & Cui, 2013; Kim, Natter, et al., 2014; Park et al., 2017; Soule & Madrigal, 2015). I consider those types of ERP as obvious and easily noticeable clues, which may make consumers feel like they are not free to "pay what they want." Besides, previous research also shows that obvious ERP harms specific product categories like hedonic products and services (Weisstein et al., 2019).

This work seeks to connect nudge theory with the literature on pay-what-you-want (PWYW). By implementing an external reference price (ERP) through a nudge, a specific type of choice architecture that involves designing choices in a way that orients people towards making a particular decision, consumers can be influenced without their awareness, allowing for control over their perception. Through two studies, I designed a nudge using a difference in pricing order. In the pilot study, participants were randomly assigned to two groups and presented with a list of paintings in either a descending or

ascending pricing order. In the main study, I used the same nudge in a pizza restaurant context to eliminate the potential influence of a charity context. I tested the impact of nudges on consumers' willingness to pay within pay what you want context. In both the pilot study and the main study presented, nudges were manipulated by exposing participants to a list of products either in a descending or ascending pricing order. Thus, I expect that using the order of price presentation as a nudge can influence consumers perceived external reference price.

This thesis is organized as follows: I first present the literature on the key constructs, then I present two experiments that I conducted along with their results. I conclude the thesis with general discussion in the end.

CHAPTER 2 LITERATURE REVIEW

In this section, I provide a comprehensive review of the literature on pay-what-you-want (PWYW) pricing schemes. Additionally, I review the literature on nudge theory and reference price and argue that nudges may serve as a more subtle form of external reference price in the context of PWYW pricing than obvious anchors. Building on this, I put forth three hypotheses, including our main hypothesis and two moderating effects.

2.1 Pay What You Want Pricing

Pay what you want (PWYW) is a participative pricing model in which the buyer has maximum control over price setting. The buyer can set any price above or equal to zero, and the seller cannot reject it (Kim et al., 2009). Participative pricing strategies, such as name-your-own-price (NYOP) and PWYW, have gained popularity in recent years (Kim et al., 2009; Kunter, 2015; Welsh, 2008). Unlike standard pricing, these new pricing schemes allow consumers to participate in the price-setting process. Allowing consumers to be part of the pricing-setting process enhances their perceived fairness compared to posted prices and increases consumer satisfaction (Haws & Bearden, 2006). Among the different participative pricing schemes, the pay-what-you-want pricing scheme is considered the most radical approach (Kim et al., 2009). Unlike NYOP, it does not offer sellers an "opt-out" option, which means the seller cannot say no to any price a customer proposed, including zero. The PWYW pricing strategy also achieves better outcomes compared to other participative mechanisms. For instance, consumers are more satisfied with PWYW and experience less pain when compared to NYOP (Wagner et al., 2022). PWYW strategy achieves higher profits when the product has low marginal costs

(Krämer et al., 2017), and consumers are less likely to choose a zero price under PWYW than NYOP (Schröder et al., 2015).

Extensive literature suggests that consumers are willing to pay more than zero under the PWYW pricing model, which contradicts traditional economic theory suggesting that consumers maximize their utility by paying the lowest possible price (e.g. Hall, 1990). For instance, Kim (2009) conducted three separate field experiments in a restaurant, cinema, and delicatessen, which indicated that consumers pay significantly more than zero. After the field experiment, the researchers continued implementing PWYW in the same restaurant for a year and demonstrated that PWYW could be profitable in the long run (Kim et al., 2010). Riener and Traxler (2012) also analyzed two years of data from a restaurant that implemented PWYW and found that the average payment declined slightly, but the daily number of guests steadily increased, resulting in a rise in total revenues. Other research argues that implementing PWYW with a low-marginal cost product (i.e., Live streaming) can lead to a decrease in payment in the long run because cumulative spending may make consumers feel they have already paid enough (Ma et al., 2022).

Other works have discussed the implementation of PWYW (e.g. Jones et al., 2015; Robitaille et al., 2021). PWYW has largely been studied in charity donation contexts and the results of those studies suggest that PWYW can promote more socially desirable results like increasing consumers' charitable giving (Fowler & Thomas, 2019; Gneezy et al., 2010; Jin et al., 2022). PWYW is also in line with shared social responsibility, which refers to the idea that businesses, as well as individuals, have a responsibility to contribute to the well-being of society and the environment (Jin et al.,

2022). For example, through a field experiment, Gneezy et al. (2010) showed that PWYW combined with charitable giving activities like indicating part of the revenue will be donated to charity, can have a positive impact on both consumers' decision to purchase, payment amount and the retailer's profits. Outside of a charity context, PWYW has been found to have other benefits, including reducing piracy for digital products (Kim et al., 2022) and avoiding Bertrand competition (Chao et al., 2019; Samahita, 2020), which refers to a situation in which businesses cannot influence the market price and must set their prices based on their competitors' prices. Implementing PWYW can also be a promotional tool to avoid creating a low-value image compared to monetary promotions. Wagner (2019) found that offering consumers a PWYW option rather than using a discount can lower consumers' price image (the overall perception or mental image that consumers have of a particular product's price) without lowering their internal reference prices.

Prior studies identified consumers' motives for payment under PWYW including moral engagement (Narwal & Rai, 2022), fairness (Jang & Chu, 2012; Kunter, 2015; Rabbanee et al., 2022; Schons et al., 2014), social norms (Santana & Morwitz, 2015, 2021), and consumer satisfaction (Kunter, 2015; Schons et al., 2014). Despite the motivations for payment of PWYW and the benefits of implementing the PWYW pricing scheme, PWYW is still considered a high-risk pricing strategy because of its nature (Kim et al., 2009). Existing literature suggests multiple ways to control the risk under PWYW, including reference prices.

2.2 External Reference Price and PWYW

Reference prices are standards against which the purchase price of a product is

judged (Monroe, 1973). Reference price influences consumers' willingness to pay (WTP) for a product or service (Mazumdar et al., 2005; Monroe, 1973). We can distinguish between internal reference price (IRP) and external reference price (ERP). An internal reference price is defined as a price in consumers' memory that serves as a basis for judging or comparing actual prices (Grewal et al., 1998). An external reference price typically refers to retailer-supplied comparative prices that consumers use to compare the offered price of a product/service (Monroe, 2002). For instance, consumers form an internal reference price based on their past purchasing experiences and subsequently adjust this reference price by the external reference price, which is typically represented by the price tag. Consumers use external reference prices as anchors to adjust their willingness to pay (Mazumdar et al., 2005). Prior literature suggests ERP significantly influences consumers' perception of advertised products (Biswas et al., 1999; Chandrashekar & Grewal, 2006; Hardesty et al., 2002; Krishna et al., 2002). For example, Chandrashekar and Grewal (2006) suggest that advertised reference price can have a significant impact on consumer perceptions of value and purchasing decisions, and that the format of savings presentation (e.g., percentage-off format and a dollar-off format) can moderate these effects. The literature also found that consumers often use external reference prices as a benchmark for evaluating the fairness or value of a product's price, and that these reference prices can significantly influence their price expectations and purchasing decisions (Kopalle & Lindsey-Mullikin, 2003). Besides, reference price can also significantly influence consumer perceptions of the value of the product and affect their bidding behavior in auctions (Kamins et al., 2004).

ERP has an impact on what consumers choose to pay under PWYW pricing strategy. Since consumers' payments under PWYW pricing are motivated by social exchange norms: consumers may fear social disapproval or sanctions if they pay zero when others pay more (Kim et al., 2009). Thus, consumers will seek ERP as socially acceptable or normative prices to avoid appearing poor or cheap (Lynn, 1990). External reference price (ERP) received the most attention from researchers since sellers have some control over ERP and it has a greater impact under the PWYW pricing scheme than internal reference price (IRP) (Narwal & Nayak, 2020). Research suggests ERP significantly impacts consumers' payment under PWYW (e.g., Kim et al., 2014; Soule & Madrigal, 2015). Different forms of ERP under the PWYW scheme were examined, including maximum/minimum price (Johnson & Cui, 2013; M. H. Jung et al., 2016), suggested price (Johnson & Cui, 2013; M. H. Jung et al., 2016; Soule & Madrigal, 2015) and posted regular price (Gautier & Klaauw, 2012; Roy et al., 2016). Most empirical research results reported a positive relationship between the presence of ERPs and consumers' final payment and suggest sellers should present consumers with ERPs under PWYW settings. However, some studies reported the opposite results. For instance, Johnson and Cui (2013) suggest a minimum or maximum price harm consumers' final payment. Jung et al. (2016) suggest that setting a high ERP has little effect on consumers' payment. Weisstein et al. (2019) report an adverse effect of ERP on hedonic products and services under PWYW. Gerpott (2017) concludes that the results on external reference prices in a PWYW setting are ambiguous, and there is a need for theory-grounded empirical PWYW studies. It is also argued suggested ERP is perceived as a constraint over the freedom to choose prices in PWYW and seller's attempt to influence their

payments by consumers and further lower consumers' payments (Johnson & Cui, 2013; Narwal & Rai, 2022; Roy et al., 2016).

In conclusion, (1) providing higher ERP does not always lead to a higher PWYW payment. (2) Existing forms of ERP (e.g., minimum price, maximum price, suggested price) are perceived as a constraining cue. Those obvious cues cause concern under PWYW settings that may let consumers feel they are still in traditional pricing settings. Based on the above literature, I believe there is a need for a more subtle ERP under the PWYW pricing scheme. Nudge theory can be helpful in guiding marketers in designing such subtle ERP.

2.3 Nudge Theory

Choice architecture refers to the ways in which the context and presentation of choices can influence people's decisions (Thaler & Sunstein, 2008). Nudges are any aspects of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives (Thaler & Sunstein, 2018). Since the theory was introduced, nudges have been widely used by policymakers, business owners, and charities (e.g., Despard et al., 2022; Gajewski et al., 2021). The most common form of a nudge is to set the desired option like a green product or healthy food, as default to reach a desirable outcome (e.g. Romero & Biswas, 2016). For example, researchers conducted a lab experiment and increased Socially Responsible Investment (SRI) fund sales by setting the fund as the default option; the results suggest half of the investors didn't opt-out the default allocation and those opt-out investors invested more in the SRI funds than the control group (Gajewski et al., 2021). Johnson and Goldstein's (2003) found that countries with opt-out organ

donation systems had much higher rates of organ donation than countries with opt-in systems, highlighting the powerful impact of defaults on decision-making. Theoretical work on nudge theory suggests different forms of nudges, like low effort nudges. Nudges can leverage automatic and intuitive mental processes (Thaler, 1985). For example, Thaler and Sunstein (2008) provide several illustrations including placing healthy food options at eye level in a cafeteria to encourage healthier eating or using smiley faces on utility bills to encourage people to conserve energy. Other nudges, on the other hand, are designed to engage the reflective and analytical mental processes and require more cognitive effort. For example, providing detailed information about the health risks of smoking or offering financial incentives for completing a health screening. These nudges typically involve providing information, feedback, or incentives to encourage people to make more deliberate choices (Kahneman, 2011). The literature primarily focuses on intuitive nudges as they are often sufficient to influence people's decisions, including those that may be made in the future (Almy & Krueger, 2013).

The literature has investigated factors that may affect the effectiveness of nudges. For instance, Ingendahl et al. (2021) demonstrated that individuals with a high need for cognition were more likely to be influenced by nudges than those with a low need for cognition, however, it's important to note that nudges were still effective across different levels of need for cognition. In addition, some studies have indicated that certain nudges may elicit negative emotions among consumers with low self-control, with evidence suggesting that people with low self-control may not benefit much from a nudge because they make little or no adjustments to their consumption when exposed to it. On the other hand, people with high self-control benefit from a nudge and are more likely to use the

informational content of the nudge to undertake health-improving behavioral change (Thunström, 2019). Other findings suggest the effectiveness of nudges may differ for different countries (e.g. Jung & Mellers, 2016; Reisch & Sunstein, 2016), contexts (Engel & Kurschilgen, 2020), and customer loyalty (Martuza et al., 2022). For instance, in a large-scale field experiment, Martuza et al. (2022) found that honesty-nudges did not significantly reduce insurance fraud in the short-term, but the direction of nudge effects positively correlated with customers' age and customer loyalty. Notably, some research suggest the boundary condition of nudges, for example, the behavioral changes induced by nudges may also not persist over time, as demonstrated by research finding that pro-social behavior induced by choice defaults does not lead to subsequent effects (Ghesla et al., 2019; Mobekk et al., 2020). Furthermore, evidence suggests that manipulation of the default option can shape participants' behavior even if they are aware of it (Bruns et al., 2018).

A vast literature discussed the implication of the nudge theory (e.g., Johnson & Goldstein, 2003; Jones et al., 2015). Nudges can help people choose healthy eating when in restaurants or buying packaged food by manipulating the position of different foods/products (Dayan & Bar-Hillel, 2011; Romero & Biswas, 2016) and making a given food slightly more challenging to reach, (Rozin et al., 2011). Similarly, adjusting the volume on ambient sound systems (Biswas et al., 2018), setting a default option (Colby et al., 2020; Jesse et al., 2021), changing the package (Oh et al., 2022; Reinoso-Carvalho et al., 2021), or using a star-rating system (Thomas et al., 2021) have been shown to impact people's food choices.

Nudging has been demonstrated to be a valuable tool for decision-makers, providing various benefits in various domains (Hummel & Maedche, 2019). For example, nudges have been used to encourage individuals to make ethical decisions (Bowie, 2009; Mukerji & Mannino, 2022), adopt environmentally-friendly behaviors (Gillingham & Bollinger, 2021; Hilton et al., 2014), promote cooperation in the provision of public goods (Barron & Nurminen, 2020), increase the use of public transportation and cycling (Franssens et al., 2021; Fyhri et al., 2021), reduce illegal garbage disposal (Merkelbach et al., 2021), promote safe driving (Choudhary et al., 2022) and improve agricultural harvests (Michels et al., 2023). Notably, nudges play important role in helping people with their savings and reducing consumers' debt (e.g. Despard et al., 2022; Jones et al., 2015). For example, a field experiment increased the tax refund savings of low-income families by adding an emergency saving reminder when they filed their taxes (Despard et al., 2022). Nudges have been shown to play a crucial role in facilitating savings and alleviating consumer debt (García & Vila, 2020; Thaler & Benartzi, 2004), highlighting the potential for behavioral interventions to positively influence financial decision-making. In a large field experiment, Thaler and Benartzi (2004) successfully increased employees' retirement savings by automatically enrolling them in a designed program. Moreover, nudging has implications in the realm of charitable donations (Goswami & Urminsky, 2016) and organ donation (Johnson & Goldstein, 2003; Robitaille et al., 2021).

Further nudges have the potential to (1) decrease the choice overload (providing consumers with too many choices can actually reduce the likelihood of making a purchase) by altering the choice architecture and promoting decision making (Malone &

Lusk, 2017), (2) enhance consumers' self-impressions and emotions (Liu et al., 2021), (3) reduce instances of dishonest insurance claims (Martuza et al., 2022), and (4) increase tip earnings (Hoover, 2022). Additionally, in the context of pricing, the order in which prices are presented (i.e., from high to low versus low to high) can serve as a nudge and impact consumers' choice towards more expensive products (Suk et al., 2012).

2.4 Using a Nudge Instead of an Anchor

The existing literature on Pay-What-You-Want (PWYW) indicates that many studies have utilized anchors such as suggested price, minimum or maximum payment as External Reference Prices (ERP) to influence consumers' payments. The anchoring effect is a well-established phenomenon in psychology and has been extensively studied in recent decades (Furnham & Boo, 2011). Anchoring occurs when individuals are influenced by an initial value or anchor when making subsequent estimates or judgments, even if the anchor is not related to the value being estimated (Tversky & Kahneman, 1974). The anchoring effect also has significant implications for various aspects of consumers' decision-making, including judgment (Tversky & Kahneman, 1974), estimation (Ariely et al., 2003), negotiation (Northcraft & Neale, 1987), and pricing (Grewal et al., 1998).

The early studies of the anchoring effect focus on numeric estimates (Chapman & Johnson, 1999; Nisbett & Ross, 1980; Tversky & Kahneman, 1974). For example, Tversky and Kahneman (1974) asked participants to estimate the percentage of African countries that were members of the United Nations. Before making their estimates, participants were randomly shown either a high or low anchor, which was a number that represented a reference point for their subsequent estimates. The results showed that

participants who were shown a high anchor (a higher number, e.g., 100) estimated a higher percentage of African countries in the UN than those who were shown a low anchor (a lower number, e.g., 20). This suggests that the initial anchor influenced participants' subsequent estimates, demonstrating the anchoring effect.

Anchoring also has implications for consumer behavior, particularly in the context of pricing (Furnham & Boo, 2011). Several studies have shown that consumers are more likely to purchase a product if its price is anchored with a higher value (Chandrashekar & Grewal, 2006; Donoho & Swenson, 1996; Niedrich et al., 2001). For example, Donoho and Swenson (1996) find that the top-down sales tactic (presenting the most expensive or highest-end product in a product line first) may anchor buyers on a higher-priced product, making them more likely to choose other higher-priced products within the same product line. Anchoring has also been shown to influence the perceived value of a product, with higher anchors leading to higher perceived value (Niedrich et al., 2001; Northcraft & Neale, 1987).

However, using anchors as an external reference price under PWYW pricing scheme may be perceived by consumers as a constraint on their freedom to choose, and as an attempt by the seller to influence their payments, resulting in lower payments and negative consequences (Johnson & Cui, 2013; Narwal & Rai, 2022; Roy et al., 2016). The present research aims to address this limitation by using a nudge as a more subtle form of ERP that allows sellers to manage the risk under PWYW, without making consumers feel constrained.

A nudge and an anchor are two distinct concepts in the field of behavioral economics. While both can influence people's decisions, they operate in different ways. A

nudge is "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008). For example, placing fruit at eye level in a cafeteria can nudge people towards choosing healthier snacks. In contrast, an anchor is "a number or value that serves as a starting point for a subsequent judgment" (Kahneman & Tversky, 1974, p. 1124). For example, real estate agents may use an initial high asking price as an anchor for potential buyers, who may then adjust their subsequent offers based on that initial reference point. In the context of Pay-What-You-Want (PWYW) pricing, external reference prices such as maximum and suggested prices can serve as anchors that guide consumers' subsequent evaluations. However, that a nudge need not necessarily serve as a starting point, but rather may refer to any aspect of the payment process that has the potential to influence consumers' payment decisions. In conclusion, a nudge is a small change in the environment that is designed to influence people's behavior in a particular way and an anchor refers to a reference point that people use to make decisions.

The current research designed a nudge under PWYW context by presenting a descending or ascending pricing order. The presentation of product prices and their format have a critical impact on consumer perception and decision-making (Bagchi & Davis, 2012; Parguel et al., 2016). Prior research has investigated the influence of presentation order, specifically whether displaying the price before the quantity (e.g., "29 dollars for 70 items") or the quantity before the price (e.g., "70 items for 29 dollars"), affects consumers' perceptions of package deal value and attractiveness (Bagchi & Davis, 2012). Additionally, Suk et al. (2012) have suggested that the order in which prices are

presented, either from high to low or low to high, can serve as a "nudge" and influence consumers' selection towards more expensive products. The descending sequence has been shown to yield higher estimates, indicating that participants relied on the initial piece(s) of information as a "starting point" to make inferences (Epley & Gilovich, 2010).

Hypothesis 1:

Participants in the descending pricing order will have higher perceived external reference price and WTP compared to participants in the ascending pricing order.

Perceived reference price will mediate the relationship between pricing orders and WTP.

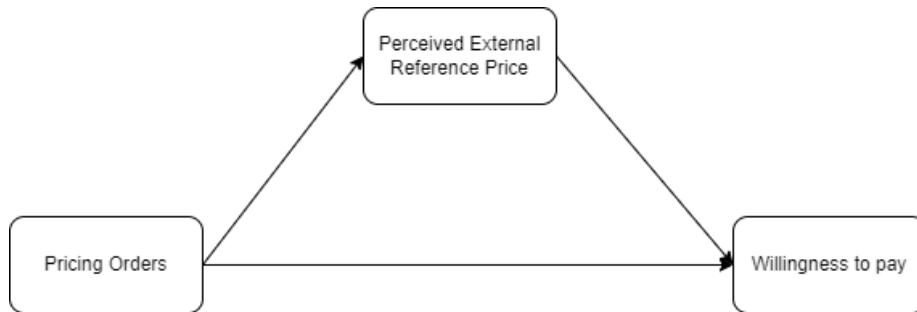


Figure 1 Conceptual Model for Hypothesis 1

2.5 Need for Cognitive Closure

Need for Cognitive Closure (NFCC) is an individual difference that describes the degree to which people seek or avoid cognitive closure or the desire for definite answers to complex problems or situations (Kruglanski & Webster, 1996). People with a high NFCC tend to prefer quick and straightforward solutions and are less comfortable with ambiguity, while those with low NFCC tolerate uncertainty and complexity more readily. The concept of NFCC has been applied to a variety of domains, including politics, decision-making, and interpersonal relationships (e.g. Golec de Zavala & Van Bergh,

2007; Kruglanski & Webster, 1996). Although previous research has indicated that nudges can influence consumers regardless of their level of Need for Cognitive Closure (NFCC), recent studies suggest that low NFCC consumers may be more responsive to nudges (Ingendahl et al., 2021). In the present study, I was interested in testing whether different pricing order will impact individuals' price evaluation of the product.

Consumers with an ascending pricing order are presented with a greater amount of information prior to encountering the PWYW option in comparison to the descending pricing order. Given that individuals with high NFCC exhibit increased intolerance for ambiguity and uncertainty, as well as a heightened propensity to seek definitive answers, which in turn influences their attitudes (Marchlewska et al., 2018), it is hypothesized that participants with high NFCC may demonstrate differential evaluation towards the product depending on the presentation format: descending versus ascending pricing order.

Hypothesis 2: The relationship between pricing presentation order and perceived reference price will be stronger for participants with high levels of NFCC compared to participants with low levels of NFCC.

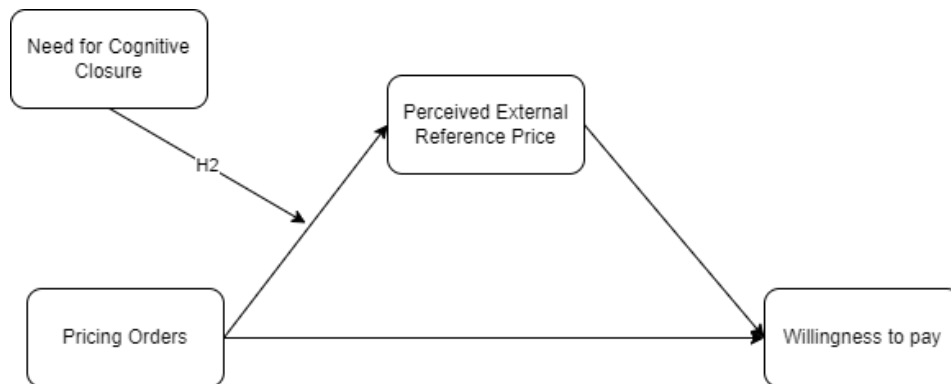


Figure 2 Conceptual Model for Hypothesis 2

2.6 Big Five Personality Traits

The big five personality traits are a widely recognized and extensively researched framework used to describe human personality. The five traits include openness: a person's willingness to experience new things and their imagination and creativity; Conscientiousness: a person's organization, responsibility, and dependability; Extraversion: a person's social behavior, assertiveness, and positive emotions. Agreeableness: a person's kindness, empathy, and cooperativeness; and neuroticism: a person's emotional instability, anxiety, and negative emotions (Costa & McCrae, 1992). Big five personality traits also impact people's reaction to nudges. For example, individuals with high conscientiousness are more likely to pay attention to details and be prepared, which may lead them to have more positive reaction towards the nudges (Kamilçelebi & Songül, 2020). Oybo and Vassileva (2019) revealed that high openness and high conscientiousness increase susceptibility to social proof, which is positively correlated with the presence of socially acceptable norms. As the Pay-What-You-Want (PWYW) pricing scheme relies on external reference prices as social norms (Kim et al., 2009), the impact of external reference prices may vary among individuals with different levels of openness and conscientiousness. For exploratory purposes, I also measured the other three personality traits.

Hypothesis 3a: The relationship between pricing presentation order and perceived reference price will be stronger for participants with high levels of conscientiousness compared to participants with low levels of conscientiousness.

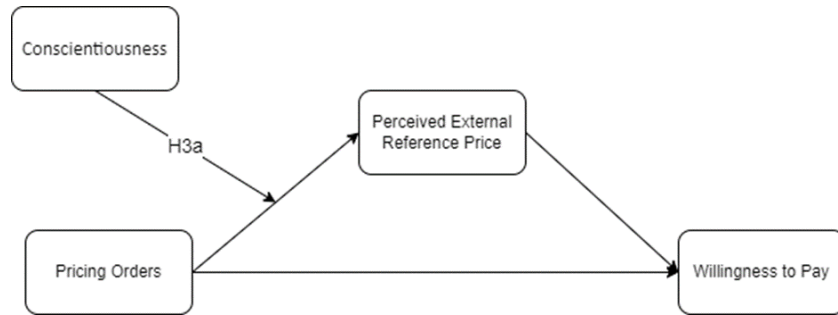


Figure 3 Conceptual Model for Hypothesis 3a

Hypothesis 3b: The relationship between pricing presentation order and perceived reference price will be stronger for participants with high levels of openness compared to participants with low levels of openness.

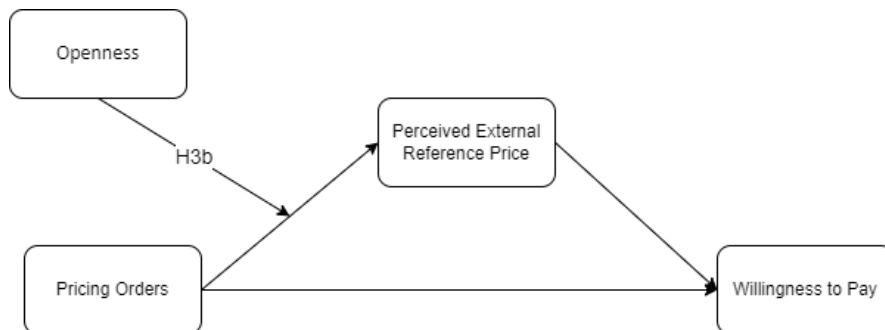


Figure 4 Conceptual Model for Hypothesis 3b

CHAPTER 3 TEST OF HYPOTHESIS

In this section, the two studies conducted to test the hypotheses are presented. The two studies follow an experimental design, both in a controlled lab environment.

3.1 Pilot Study

The primary aim of the pre-test is to investigate the main hypothesis, which examines whether nudges presented to influence consumers' perceived external reference price have an impact on their payment behavior under Pay-What-You-Want (PWYW). Another aim is to test our experimental materials. Participants were instructed to envision themselves participating in a charity event that raises funds for people in need. They were then provided with a list of five paintings and asked to state their preferred price for the target painting. I expected that the order in which paintings' prices were presented would impact payments by participants.

3.1.1 Method

One hundred and sixty-one residents of Canada and the United States were recruited on Prolific (50% Male; $M_{age} = 35.75$ years; one participant was excluded from further analysis because of incomplete response). The experiment was administered through Qualtrics, and participants were informed that they would be taking part in a marketing study.

Participants who consented to participate in the study were randomly assigned to one of three conditions: ascending price order, descending price order, and random price order. In the descending pricing order condition, participants were shown the target painting with the Pay-What-You-Want price tag first, followed by four other paintings

listed in a descending price order. In the ascending pricing order condition, the first four paintings were listed in an ascending pricing order, with the target painting at the bottom of the list. Participants in the control condition were presented with a list of paintings in a random pricing order. Due to an operationalization mistake in the control condition, the price and the painting do not match under the descending pricing order condition and the ascending pricing order condition. We removed the control condition from further analysis.

3.1.2 Measures

Following the presentation of the painting lists with different pricing orders, participants were asked to respond to questions aimed at assessing the variables.

Willingness to Pay. Participants' willingness to pay was measured using an open-ended, text entry format. Participants were asked, "If I had the opportunity to buy the painting here and now, I would be willing to pay \$ _____".

Perceived external reference price. Perceived External Reference Price was measured in a similar format by asking, "How much do you think the painting would be worth if it were sold at a regular art gallery?" followed by a blank text box for their response.

Manipulation check. To assess the success of the manipulation, participants responded to five questions on a five-point scale, ranging from strongly disagree to strongly agree. Participants were asked to what extent they believed the painting list presented the prices in a high-to-low or low-to-high order, and randomly. Additionally, participants were asked whether the target painting was presented first or last.

Need for Cognitive Closure. To measure the need for cognitive closure, participants completed a six-item scale, from the study that tested the role of NFCC in the disrupt-then-reframe influence technique (Kardes et al., 2007), (e.g., I find that a well-ordered life with regular hours suits my temperament. See Appendix C). I expected that participants with lower NFCC would be more prone to the impact of our nudge manipulation.

Big Five Personality Traits. A ten items scale was used to measure participants' extraversion, agreeableness, openness, conscientiousness, and neuroticism. The scale was from Nunes (2018), each trait was measured by two items (i.e., Extraverted, enthusiastic and Reserved, quiet, Appendix D).

In addition, in this study, I also measured participants' attitude towards the PWYW price by a single measure asking participant: "How do you feel about this pay-what-you-want pricing strategy?" (Anchored: 1 = strongly dislike it, 7 = strongly like it).

3.1.3 Results

Manipulation Checks. I examined the effect of pricing order manipulation using an independent-samples t-test on the extent participants believed the painting list presented the prices in a high-to-low or low-to-high order. The results indicated a significant difference in the perception of pricing order between the two groups, as reflected in the mean values of the pricing order identified by participants ($M_{ascending} = 1.133$, $M_{descending} = 4.733$, $t(118) = 11.147$, $p < .001$) and the target painting's location on the list ($M_{ascending} = 1.133$, $M_{descending} = 4.733$, $t(118) = 38.247$, $p < .001$). These findings suggested that participants in both conditions were cognizant of the pricing order

and that the manipulation was successful in inducing the intended effect since participants in the descending order have higher scores.

Test of Hypothesis 1. An independent-samples *t*-test with participants WTP as dependent variable was conducted to compare the mean difference between ascending pricing order ($M = \$63.25$) and Descending pricing order ($M = \$73.62$). The test revealed no significant difference between the two groups ($t(118) = -1.5485, p = 0.1242, 95\% CI [-23.62, 2.89]$). An independent-samples *t*-test with perceived external reference price as the dependent variable was also performed, Results showed no significant result of pricing order on perceived external reference price ($t(118) = 0.17323, p = 0.8628, 95\% CI [-101.18, 120.58]$). In summary, though the result did not support our hypothesis, the difference in willingness to pay ($M_{ascending} = 63.25; M_{descending} = 73.62$) between the ascending pricing order and descending pricing order condition is directionally consistent with my prediction.

Test of Hypothesis 2. NFCC was excluded from my analysis because it was influenced by the independent variable pricing orders ($F(1, 118) = 4.162, p < 0.05$).

Test of Hypothesis 3. Both conscientiousness and openness were measured by two items. Openness was excluded from further analyze because of the low internal consistency ($\alpha = 0.59$). The composite score of conscientious ($\alpha = 0.75$) was used in the following analysis.

I conducted a moderated mediation analysis (Hayes, 2017; Process model 7, bootstrapped with 1,000 samples) using pricing orders as the independent variable, conscientiousness as the moderator, perceived external reference price as the mediator,

and WTP as the dependent variable. Results did not find a significant interaction of conscientiousness and pricing order on perceived external reference price ($B = 10.6353$, $t(116) = 0.1949$, $p = 0.8458$). I also did not find a significant effect of pricing orders on final payments ($B = 5.6226$, $t(116) = 1.6259$, $p = 0.1067$). The results did not show any indirect effect for the model ($B = 0.1557$; 95% $CI = -0.8564, 0.8733$).

3.1.4 Discussion

Results from the pilot study did not demonstrate that pricing order has effect on perceived reference price, and conscientiousness has no significant moderating effect between price orders and perceived reference price. I suspect that our charity context might have had an impact on the results because participants' personality traits also interact with the charity context (Bekkers, 2006). As suggested in previous literature, participants with high conscientiousness and agreeableness and low extraversion (Eroglu & Croxton, 2010), as well as with high openness to experience (McElroy & Dowd, 2007) are more susceptible to the anchoring effect. Thus, I suspect the charity context we used might have impacted on our results. The need for cognitive closure (NFCC) is also correlated with the pricing orders which made it impossible to investigate its effect as a moderator.

3.2 Main Study

The study replicates the pilot study using a pizza restaurant context. As in the previous study, I showed participants a list of pizzas, but I eliminated the possibility of charity context's impact. Participants were instructed to envision themselves visiting a pizza restaurant and the waiter said the target Basil & Sundried Tomatoes pizza allow them to pay what they want. They were given a pizza menu and asked to state their preferred

price for the target pizza. The different pricing orders were presented for each condition. I hypothesized that the descending pricing order condition would lead to higher payments from participants as compared to the ascending pricing order condition.

3.2.1 Method

One hundred and four undergraduate students were recruited from a large university for course credit (56.7% Female; $M_{age}= 21.68$ years; one participant was further excluded from further analysis because of incomplete responses). They were randomly assigned to either descending pricing order condition or ascending pricing order condition. From the result of the pilot study, though not statistically significant I identified some difference between ascending pricing order and descending pricing order thus, I focus on those two conditions and removed the control condition I set in the pre-test. This will help maximize the power available to further test this difference and still allows for testing our hypotheses (Suk et al., 2012).

Similar to the previous study, those in the descending pricing order condition were shown the target pizza with the Pay-What-You-Want price tag first, followed by other pizzas listed in a descending price order. Those in the ascending pricing order condition were shown the pizzas listed in an ascending pricing order, with the target pizza at the bottom of the list with a pay-what-you-want price tag. After evaluating the pizza menu, participants were asked to give their WTP and measured perceived external reference price, NFCC, and personality traits in the same scales (See Appendix C and Appendix D).

Additionally, I measured participants' attitude towards the target Basil &

Sundried tomatoes pizza by a common three-items measurement attitude scale (See Appendix B).

3.2.2 Results

Manipulation Checks. I examined the effect of pricing order manipulation using independent-samples *t*-tests on the extent participants believed the pizza menu presented the prices in a high-to-low or low-to-high order. The results indicated a significant difference in the perception of pricing order between the two groups, as reflected in the mean values of the pricing order identified by participants ($M_{ascending} = 2.85$, $M_{descending} = 3.77$, $t(102) = -2.292$, $p < .05$) and the target pizza's location on the list ($M_{ascending} = 2.73$, $M_{descending} = 5.719$, $t(102) = -7.940$, $p < .001$). These findings suggest that participants in both conditions were cognizant of the pricing orders and that the manipulation was successful.

Test of Hypothesis 1. An independent-samples *t*-test with participants willingness to pay as dependent variable was conducted to compare the mean difference between the Ascending pricing order ($M = \$13.16$) and the Descending pricing order ($M = \$13.21$). The test revealed no significant difference between the two groups ($t(102) = -0.10388$, $p = 0.9175$, 95% *CI* [-1.626351, 1.516265]). An independent-samples *t*-test with perceived external reference price was also performed, results reported no significant result of pricing orders on perceived external reference price ($t(102) = 0.035799$, $p = 0.9715$, 95% *CI* [-1.321057, 1.369619]).

Test of Hypothesis 2. Need for cognitive closure was measured through a six items scale that showed high internal consistency ($\alpha = 0.79$). The composite score is used

in the following analysis. I conducted a moderated mediation analysis (Hayes 2017; Process model 7, bootstrapped with 1,000 samples) using pricing orders as the independent variable (coded as 1 = ascending pricing order, 2 = descending pricing order), NFCC as the moderator, perceived external reference price as the mediator, and final payment as the dependent variable. results did not find a significant interaction of NFCC and pricing order on perceived external reference price ($B = -0.6983$, $t(100) = -0.9041$, $p = 0.3681$). I also did not find a significant effect of pricing order on final payments ($B = 0.0953$, $t(100) = 0.1441$, $p = 0.8857$). The results did not find any indirect effect for the model ($B = -0.4229$; 95% $CI = -1.09, 0.27$).

Test of Hypothesis 3. Both conscientiousness and openness were measured by two items. Openness was excluded from further analysis because of the low internal consistency ($\alpha = 0.45$). The composite score of conscientiousness ($\alpha = 0.75$) was used in the following analysis.

I conducted a moderated mediation analysis (Hayes 2017; Process model 7, bootstrapped with 1,000 samples) using pricing orders as the independent variable (coded as 1 = ascending pricing order, 2 = descending pricing order), conscientiousness as the moderator, perceived external reference price as the mediator, and final payment as the dependent variable. Results did not find a significant interaction of conscientiousness and pricing order on perceived external reference price ($B = -0.4226$, $t(100) = -1.1888$, $p = 0.2373$). I also did not find significant effect of pricing on final payments ($B = 0.0953$, $t(100) = 0.1441$, $p = 0.8857$). The results did not find any indirect effect for the model ($B = -0.2559$; 95% $CI = -0.65, 0.15$).

Other Findings. I was interested in if any of the independent variables and moderators have impact on participants attitude towards the PWYW option. A moderation analysis (Hayes 2017; Process model 1) with pricing orders as independent variable (coded as 1 = ascending pricing order, 2 = descending pricing order), NFCC as moderator and attitude towards the target pizza as dependent variable was employed. Result suggested the interaction of NFCC and pricing order had an impact on attitude ($t(100) = -2.0214, p = 0.0459, 95\% CI [-1.2294, -0.0115]$). The conditional effect indicated that participants with high level NFCC (score = 5.1666 and higher) showed a more positive attitude towards the target pizza in ascending pricing order compared to descending ($t(100) = -2.0371, p = 0.0443, 95\% CI [-1.70, -0.02]$).

Table 1 Result of Moderation Analysis

	β	t	p
<i>Effect on Attitude towards the pizza</i>			
Pricing Orders	2.3430	1.8135	>.05
NFCC	1.1615	2.2024	<.05
Pricing Orders X NFCC	-0.6204	-2.0214	<.05
<i>Conditional Effect</i>			
NFCC	Effect	LLCI	ULCI
1 SD below mean	0.2748	-0.4466	0.9963
Mean	-0.3456	-0.9047	0.2135
1 SD above mean	-0.8627	-1.5498	-0.0225

The correlation coefficient between participants' attitude towards PWYW and attitude towards the pizza was positive and significant ($r = 0.27$).

3.2.3 Discussion

Results from the main study did not demonstrate that pricing order has an effect on perceived reference price. Conscientiousness and NFCC had no significant moderating effect between price orders and perceived reference price or WTP. However, the study successfully revealed the moderating effect of NFCC. Individuals with high levels of NFCC displayed a more favorable attitude towards the PWYW option in the ascending pricing order condition compared to the descending pricing order condition. I suspect that this outcome may be attributable to the greater amount of information presented prior to the introduction of the PWYW option in the ascending pricing order condition. The presentation of the other options before getting to the PWYW option may have an impact on decreasing the ambiguity of the pricing strategy. The overall result might suggest under PWYW contexts, consumers will not simply be influenced by the first price they see on the menu, but that the entire structure of the information presented may lead to differential results when NFCC is high.

CHAPTER 4 CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

After conducting two studies in different contexts, this research did not find evidence to support the hypothesis that pricing orders have an effect on perceived reference price or final payment. Pilot study was conducted in a charity context and utilized a nudge by contrasting ascending and descending pricing orders for a list of paintings. Main study was carried out in a pizza restaurant context and employed a similar nudge design to eliminate the potential impact of the charity context. Despite the different contexts and nudge designs, both studies failed to support the hypothesized relationship between pricing orders, perceived reference price, and final payment.

4.1 Theoretical Contributions

This research aimed to provide evidence that using a nudge to influence consumers' perceived external reference price. The existing literature on PWYW indicates that many studies have utilized anchors such as suggested price, minimum or maximum payment as External Reference Prices (ERP) to influence consumers' payments (e.g., Johnson & Cui, 2013). Those anchors are perceived as a constraint over the freedom to choose prices in PWYW and seller's attempt to influence their payments by consumers and further lower consumers' payments (Johnson & Cui, 2013; Narwal & Rai, 2022; Roy et al., 2016). This research aimed to use a nudge instead of anchors to provide a more subtle form of external reference price. Though the experiments failed to validate our hypotheses, this research contributes to the literature that consumers under PWYW pricing scheme might not anchor on the first price they saw as previous literature suggested (Donoho & Swenson, 1996; Suk et al., 2012).

The current study demonstrated that individuals possessing high levels of need for cognitive closure (NFCC) exhibited a more favorable attitude towards the pay-what-you-want (PWYW) option when presented with an ascending pricing order, as opposed to a descending pricing order. In accordance with prior literature, it is evident that individuals with high NFCC tend to exhibit lower tolerance for ambiguity and uncertainty, which in turn affects their attitudinal evaluations (Marchlewska et al., 2018). When encountering the ascending pricing order, high NFCC participants were exposed to a greater amount of information before reaching the PWYW option. Consequently, they likely experienced reduced feelings of uncertainty or ambiguity, leading to a more positive evaluation of the target product. Within the context of PWYW literature, the findings of this research suggest that the presentation of the PWYW option (before or after other pricing alternatives) and the reduction of uncertainty and ambiguity are crucial factors in influencing consumer attitudes. These factors may also potentially impact the amount consumers are willing to pay under the PWYW model.

This research also revealed that consumers' attitude towards PWYW is correlated with consumers' attitude towards the product. As previous literature suggests, different pricing strategies have a robust impact on consumer perceptions and behavior including their perception of the product (Ahmetoglu et al., 2014). To the best of our knowledge, this research is the first to document that participative pricing strategies also share this characteristic with other pricing strategies.

4.2 Managerial Contributions

The research has managerial contributions for those business owners who wish to implement PWYW pricing scheme. Through the present research, I found the pricing

order effect, the order in which prices are presented to consumers can influence their preference for different options (Suk et al., 2012) may not work under PWYW pricing schemes. As recent literature suggests pricing effects are not universal and can be influenced by various factors such as regulatory focus and time horizon (Mukherjee, 2022), I provide business owners who wish to utilize this effect with more insights.

The other managerial contribution might regard the PWYW pricing scheme and consumers' attitude towards the product. Since our research revealed that high NFCC individuals will have more positive attitudes towards PWYW options if they acquire higher amount of information and attitude towards the PWYW pricing scheme is highly correlated with attitude towards the product. Business owners who wish to implement PWYW might consider the target product or category in order to have better outcomes and provide more information on the products to minimize the uncertainty and ambiguity consumers might encounter.

4.3 Limitations and Directions for Future Research

Though our results did not show that pricing order has effect on participants' perceived external reference price or final payment, this does not suggest that nudges are not effective under PWYW pricing scheme. As the literature suggests, nudges as an option of choice architecture have different forms (Sunstein, 2017). One of the limitations of this research is not identifying different forms of nudge. Finding effective forms of nudge that could influence consumers perceived external reference price under PWYW pricing context can be important for promoting and practicing PWYW pricing strategy.

The other limit of the present research lies in explaining why the pricing order did not affect final payment under PWYW. I suspect two possible reasons. First, it might be

caused by the high-level uncertainty consumers faced under PWYW pricing scheme. Previous research suggests that when consumers face uncertainty, particularly in high involvement decisions, they will learn to cope with uncertainty and ambiguity. This can include seeking out more information, relying on past experiences, or using heuristics to make decisions (Kahn & Sarin, 1988). In our case, if participants seek more information, pricing order effect will significantly fade, and relying on experience will highlight the role of internal reference price instead of making payment influenced by external reference price. The second reason might be nudges effect under uncertainty. Surprisingly, I found how nudges work under uncertainty and ambiguity still remain undiscussed. Only a few papers generally discussed that nudges might be effective in promoting optimal financial decisions under uncertainty (Franklin et al., 2019). Understanding how nudges work when consumers are in high-level uncertainty situations like PWYW might have important contributions.

Another limitation of this study is that it provides preliminary findings on the relationship between NFCC, pricing orders, and participants' attitudes towards the PWYW option, which might require further elaboration. It is recommended that future research should investigate the impact of implementing the PWYW pricing scheme on consumers' attitudes towards the product. Specifically, future studies could examine the presentation order of the PWYW option to determine whether introducing it first or last influences consumers' attitudes.

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APPENDIX A: PRE-TEST MATERIALS

Cover Story

Imagine that you have decided to take part in a local charity event, the event aims to raise money by selling paintings for people in need. You see the paintings listed below; these paintings were presented in this specific order. You would like to have the first painting. The first painting is offered in a special way, the pricing policy lets you decide the amount you would like to pay for the painting, you can choose any price you want to pay. Assume that you are able to buy this painting here and now. You would have to pay with your money and would then take the painting with you.

Manipulations

	\$___		\$40		\$___
	\$100		\$60		\$100
	\$80		\$80		\$80
	\$60		\$100		\$120
	\$40		\$___		\$90
Descending Pricing Order		Ascending Pricing Order		Control	

Note: The price points in the control condition do not match the other conditions. The control condition was therefore excluded.

A one-way analysis of variance (ANOVA) was conducted to examine the effect of pricing orders (including control condition on WTP). There was no significant main effect ($F(2, 177) = 1.725, p = 0.181, M_{\text{descending}}=73.62, M_{\text{ascending}}=63.25, M_{\text{control}}=73.38$).

Measures

- If I had the opportunity to buy the painting here and now, I would be willing to pay in \$: *Note: Please enter a number only.*
- What do you expect other people to pay for this painting in comparison to the others?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Less than the other paintings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	More than the other paintings

- How much do you think the painting will be worth if it is sold at a regular art gallery in \$?
Note: Please enter a number only.

Manipulation Check

Read each following statement and decide how much you agree with each.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The painting list presents the prices from high to low. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The painting list presents the prices from low to high. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The painting list presents the prices randomly. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The painting I was asked about is presented as the first painting. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The painting I was asked about was presented as the last painting. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

□

APPENDIX B: MAIN STUDY MATERIALS

Cover Story

Imagine that you walked into a restaurant for some pizza. You have never visited this restaurant before and you have no preference for a specific dish on the menu. The waiter gave you the menu below and told you there is an option allowing you to pay what you want for one pre-selected pizza. You can pay what you want for the *Basil & Sundried Tomatoes* pizza.

Take a minute to examine the menu below as if you were to order a pizza. Once we proceed, we will ask you a few questions.

Manipulations



The menu is titled "Pizza Italian Menu" and features a list of pizzas with their prices. The prices are arranged in descending order from top to bottom. The "Basil & Sundried Tomatoes" pizza is highlighted with a green checkmark and labeled "Pay What You Want!".

Pizza	Price
Basil & Sundried Tomatoes	Pay What You Want!
BBQ Flavor	\$ 18
White Pizza	\$ 17.5
Chanterelle Mushroom e Gorgonzola	\$ 17
Smoked Brisket	\$ 16
Pork Shoulder	\$ 15.5
Mushroom	\$ 15.5
Spicy Italian	\$ 14
Meatza	\$ 13.5
Pepperoni	\$ 13
Four Cheese	\$ 12

All pizza provide with gluten free option

Descending Pricing Order Condition



The menu is titled "Pizza Italian Menu" and features a list of pizzas with their prices. The prices are arranged in ascending order from top to bottom. The "Basil & Sundried Tomatoes" pizza is highlighted with a green checkmark and labeled "Pay What You Want!".

Pizza	Price
Four Cheese	\$ 12
Pepperoni	\$ 13
Meatza	\$ 13.5
Spicy Italian	\$ 14
Mushroom	\$ 15.5
Pork Shoulder	\$ 15.5
Smoked Brisket	\$ 16
Chanterelle Mushroom e Gorgonzola	\$ 17
White Pizza	\$ 17.5
BBQ Flavor	\$ 18
Basil & Sundried Tomatoes	Pay What You Want

All pizza provide with gluten free option

Ascending Pricing Order Condition

Measures

- If I decided to take Basil & Sundried Tomatoes pizza, I would be willing to pay
Note: Please enter a number only.
- How much do you think is the Basil & Sundried Tomatoes pizza cost on a regular menu in \$?
Note: Please enter a number only.
- How do you feel about this pay-what-you-want pricing strategy?
- Attitude How do you feel about the Basil & Sundried Tomatoes pizza?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly dislike it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly like it

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Positive
Unfavorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Favorable

Manipulation Check

The menu presents the prices from high to low.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

The menu presents the prices from low to high.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

The menu list presents the prices randomly.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

The Basil & Sundried Tomatoes pizza is presented as the first option.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

The Basil & Sundried Tomatoes pizza was listed as the last option.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

APPENDIX C: NEED FOR COGNITIVE CLOSURE SCALE

Read each of the following statements and decide how much you agree with each according to your beliefs and experiences.

	Strongly disagree (1)	Moderately disagree (2)	Slightly disagree (3)	Slightly agree (4)	Moderately agree (5)	Strongly agree (6)
I find that a well-ordered life with regular hours suits my temperament. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like to be with people who are capable of unexpected actions. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find that establishing a consistent routine enables me to enjoy life more. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy having a clear and structured mode of life. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to have a place for everything and everything in its place. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I dislike unpredictable situations. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX D: BIG FIVE PERSONALITY SCALE

Here are a number of characteristics that may or may not apply to you. Please indicate the extent to which each statement describes you accurately.

	Very Inaccurate (1)	Moderately Inaccurate (2)	Neither Accurate nor Inaccurate (3)	Moderately Accurate (4)	Very Accurate (5)
Extraverted, enthusiastic (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Critical, quarrelsome (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependable, self-disciplined (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious, easily upset (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open to new experiences, complex (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserved, quiet (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sympathetic, warm (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disorganized, careless (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm, emotionally stable (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conventional, uncreative (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX E: DESCRIPTIVE STATISTICS

Table 1 Pilot Study Descriptive Statistics

variable	n	mean	sd	var	q1	median	q3	min	max	skew	kurtosis
Age	120	34.7	12.69593	161.1866	25	32	41.25	18	74	0.968468392	0.234953701
Conscientiousness	120	7.716667	1.98813	3.952661	6	8	9	2	10	-0.665379883	-0.428266427
Gender	120	1.5	0.518563	0.268908	1	1	2	1	3	0.179281503	-1.559468587
NFCC	120	4.3625	0.914318	0.835977	3.666667	4.5	5	1	6	-0.331913372	0.241566932
Openness	120	7.375	1.824495	3.328782	6	8	9	3	10	-0.311427446	-0.755236322
WTP	120	68.43333	36.88245	1360.315	40	50	100	1	150	0.474788791	-0.7874413
ERP	120	169.8167	305.4419	93294.76	71.25	100	157.5	2	2500	5.827345982	37.09548626

Table 2 Main Study Descriptive Statistics

variable	n	mean	sd	var	q1	median	q3	min	max	skew	kurtosis
Age	104	21.68269	1.812922	3.286688	21	22	23	19	31	1.488782065	5.657687391
Attitude	104	5.187846	1.359125	1.84722	4	5.21732	6	1	7	-0.451264477	-0.229596098
Conscientiousness	104	7.240385	1.918207	3.679518	6	7	9	2	10	-0.601813155	-0.012858146
WTP	104	13.17462	3.831999	14.68422	11.75	13	15	1	25	-0.60054884	2.154514069
Gender	104	1.586538	0.514085	0.264283	1	2	2	1	3	-0.133365292	-1.496224117
NFCC	104	4.184295	0.914028	0.835447	3.666667	4.333333	4.875	1.166667	6	-0.674367179	0.571192778
Openness	104	7.336538	1.622718	2.633215	6	7	8.25	2	10	-0.546353175	0.28406248
ERP	104	14.24731	3.348789	11.21439	12	14.75	16	2	25	-0.289987575	1.880855434