# Walmart's Pricing, Quality Perception, and Customer Loyalty Through the Lens of Behavioral Economics

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#### Abstract

Behavioral economics is the economic analysis into consumers' irrational decisions. By capitalizing on specific irrationalities and cognitive thought processes, consumers' perception of products can be manipulated. Walmart, a retail food corporation focused on abundant "deals for days," struggles to balance its products' perceived quality to its low, bulk prices. The paper proposes solutions for successful food retailer Walmart to enhance shopper experience through improving discount sway, shopping stimulations, and customer loyalty; the utilized biases are anchoring, the first impression bias, and the sunk cost bias, respectively. From creating specific layouts to rearranging online interface price arrangements, behavioral economics can regulate Walmart consumer perspectives and decisions.

## 1 Introduction

"Save Money. Live Better."

The simple slogan sprouts ideas of abundant deals, a plethora of items on arrays of shelves, cheap prices, and enthusiastic shoppers, encapsulated into one retail food corporation: Walmart.

Walmart's iconic positioning made itself one of the most well-known and formulated stores in the market, accumulating 11,288 stores, 2.3 million employees, and \$277 billion globally as of 2020: more than double the sales of second place Kroger [Vol22]. Ahead of the curve, its unparalleled success derives from its "Everyday Low Prices" business model, a "lifeline" for lower and middle-income consumers to beat its competition [Bia06]. Behavioral economics, or the "economic decision-making processes of individuals and institutions," can be further utilized to improve shopper perceptions of Walmart

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products [Ken22]. Tackling cognitive irrationality, or the irrational thought processes of consumers, behavioral economics can mitigate biases and illogical perceptions of products [APA22a].

Crucial for Walmart, their low prices come with a downfall: falling victim to the price-quality inference, faltering consumer perceptions of product quality [Nei19]. Thus, improving Walmart's interfaces and business models may cause stimulations and thought processes to be more rational in scrounging through deals.

In this paper, deliberate solutions are formulated to further Walmart's psychological positioning in three key faucets: pricing, shopper experience, and customer loyalty through anchoring, the first impression bias, and the sunk cost bias, respectively.

## 2 Pricing

### 2.1 Anchoring Bias

Anchoring is a cognitive bias in which individuals irrationally adjust responses based on previous information given [Cam07]. Anchoring follows a two-step process: anchoring and adjustment. The first step "anchoring" allows individuals to perceive prior information, or the "anchor," to influence their future thought processes. Afterwards, when making their own decisions, consumers adjust their results to fit the prior anchor [Lie17].

A 1974 study by Tversky and Kahneman discovered irrationalities through experimentation of African countries and an arbitrary number; participants were given an arbitrary percentage first and then were asked if the "percentage of African countries in the United Nations" was smaller or larger than the arbitrary percentage [Sou22]. The experimenters then asked the participants to estimate the percentage of African countries in the United Nations. As expected, participants placed and adjusted their estimations towards the anchor: if the arbitrary percentage was high, then the estimate was high and vice versa. The median estimate for an anchor of 10 countries was 25 percent, while the median estimate for an anchor of 45 countries was 65 percent, violating their rationality in making decisions.

Anchoring can be implemented into economic standpoints. Through a 2007 study using Money Market Services (MMS) to forecast stock exchanges and interest rates in the market, individuals are highly motivated to invest in stocks that had grown in the past. Stock traders are anchored towards the recent preceding values of stocks, making past stock growths the "anchor" for adjusting new, present stock exchanges [Cam07]. Additionally, auctions utilize anchoring, as the seller price is the anchor towards other bids, like the Fair Market Value (FMV) of a product. The selling price is the price that the seller believes the value of their product is worth. The Fair Market Value is the price that the market agrees on. The selling price is used as an anchor for beginning bids; if the selling price is low, then bids will begin lower. Thus, "biasing influence" of the selling price will decrease when other FMVs are higher or lower than the selling price [Nor87].

In essence, by engaging previous information as an adjustment to present beliefs, anchoring can be utilized in the comparison of information: behavioral economics can profit from anchoring in price comparison.

#### 2.2 Walmart's Pricing

Price comparison is utilized in real-life scenarios and can be placed in supermarkets to compare product prices. With a necessity for a competitive edge, Walmart's main business model boasts "Everyday Low Prices" and cheaper prices than their food retail counterparts. Former CEO Sam Walton proposed cheap, bulk production year-long at "the best possible price every day of the year," making conscientious efforts to gather a year-long, stable customer base instead of fluctuating [Che14]. From this risky low-price strategy, customers continue to flock to Walmart locations with cheap products that are reliable and readily available. In a 2014 study of 150 customers surveyed for reasons to shop at Walmart, their main reasons revolved around pricing and reliability: "Low Prices Trumps All," "Broad Selection/Variety," "One-stop shop convenience," "Accessibility," and "Savings." Walmart's main advantage in the food retail industry is its pricing against its competitors.

#### 2.3 Walmart's Online Interface: Critiques

Walmart stores understand its price competitiveness but contain no clear comparison of prices for consumers to incite emotion and motivation to purchase the product.

Through Walmart's main online interface, individuals are greeted with "Walmart Deals for Days" with a large amount of "deals" that can be obtained from shopping at Walmart. For example, in the screenshot below, the "Post-it Notes Cube" has the selling price emphasized in bold, black numbers with a previous, gray price crossed out in gray. The majority of products attract users with the words "save," "seller," "reduced price," and "deals." Walmart's main color scheme is blue and yellow, such as the "+ Add" button below every image and the bolded "Save with W+" logo.

Walmart's positioning is targeted to save its customers money. Online trust is especially crucial in a digital age, as it is "one of the key obstacles to discourage online consumers from participating in e-commerce" [Bar07]. As a result, convincing consumers of "deals" is increasingly necessary with major repercussions of reducing online consumer trust, credibility, and influence to purchase Walmart products.

Comparisons of the two prices are not placed effectively to capitalize on anchoring and irrational, cognitive biases. Referencing the Post-It notes item, the bolded "\$4.97" is the current price, and to the right of it lain the crossedout "\$5.78." Two observations are made: bolded text and reading mechanisms. Since the "\$4.97" is bolded, readers are attracted to read the current Walmart

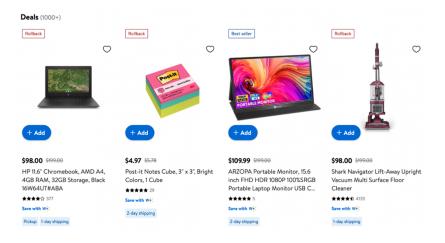


Figure 1: Screenshot from https://www.walmart.com [Pan22b]

price first and then read the comparison price. Second, since individuals subconsciously read from left to right, customers would read the current price on the left first and then read the comparison price on the right. After making customers follow such a sequence of reading, the price structure ineffectively utilizes the anchoring effect.

Before reading a price on the Walmart page, customers have no prior knowledge on specific prices of products. By reading the current, bolded, and lowered price first, customers subconsciously adjust the lowered price as an anchor to price the assumed value of the product. When compared to the crossed-out, larger price of presumably competitors, the Walmart interface elicits a major flaw: customers are shocked as to how high Walmart's competitors price the product instead of how low Walmart prices the product in comparison to their competitors.

The ineffective pricing structure diminishes the purpose of Walmart's large "deals." If consumers' FMV is anchored towards the current Walmart price, the disparity between the current price and the product's assumed value is small. Consumers, instead of turning to Walmart competitors' prices as the product's assumed value, adjust and anchor their assumed value towards the FMV, decreasing the effect of the deal. For example, if the current Walmart price for an item was \$10, then consumers anchor and adjust their assumed product value to be slightly above the FMV, in this case \$15. Even if the competitors' crossed-out price was \$25, the crossed-out price has little to no effect on the assumed value, as customers would relay that information as the following: in purchasing from Walmart, I am saving \$5—the disparity between the anchored, assumed product value and the current Walmart price with the competitor price taken slightly into account [Nor87].

In addition, the disparity between the crossed-out number and the bolded price is unclear to the consumer; consumers will not specifically compute mathematical addition and subtraction to find a specific discount. Under the Principle of Least Effort in which organisms will "choose a course of action that require[s] the smallest amount of effort," consumers will decide not to compute the exact discount in stores [APA22b]. With the Post-Its, the disparity between \$4.97 and \$5.78 is rounded to around \$1, and customers will not compute the exact \$0.81 that is saved. By not clearly stating the discount or amount saved, Walmart inefficiently influences their discounts upon the consumer to purchase products.

Walmart's discounts are not emotionally emphasized through color. Given that "color evokes feeling," comparing prices needs to evoke a specific emotion and motive for a consumer to purchase the product. Currently, the crossed-out price is the same as the line crossing it out: gray. The color gray signifies "neutrality and balance," rendering the comparisons ineffective in eliciting strong emotions [Mar22].

#### 2.4 Solutions

To utilize the anchoring bias and color psychology, specific and feasible solutions are proposed to be implemented in the online interface.

1: The bolded, current price of Walmart is placed to the right or below the crossed-out price, forcing consumers to read the previous price first and then the current price to effectively initiate the anchoring effect, increasing price disparities and discount influence.

2: Discounts explicitly state the amount and specific percentage of savings. Consumers are able to quickly compare Walmart to other food retailers, as simple numbers and percentages are preferred to reduce mathematical computations.

3: The line that crosses out previous prices is a bolder color like red. The color red emphasizes "excitement, passion, danger, energy, and action," attracting consumers to the disparity in prices.

By rearranging interface prices, consumers are influenced to purchase products with a greater perception of Walmart's discounts.

## **3** Quality Perception

#### 3.1 First Impression Bias

The first impression bias is an irrational cognitive bias in which individuals are "strongly influenced by the first piece of information they are exposed to" [Lim00]. That first piece of information has more weight and influence than information presented after it. Discovered through Asch experimentation, two groups of subjects were presented lists of adjectives describing a hypothetical person. The first group was given three positive characteristics and then three negative characteristics in the following order: "intelligent, industrious, impulsive, critical, stubborn, and envious." The second group was given the opposite: three negative characteristics followed by three positive characteristics. The two groups were then given a checklist of 18 pairs of contrasting traits—the two options being positive and negative versions of the trait—that envisioned their hypothetical character. The results followed the first impression bias: since the first group was exposed to positive traits in the beginning, those positive traits had a larger weight and impact than the other negative traits later in the list. Thus, the first group's beliefs swayed towards a positive character because of the first impression of information presented [Lim00]

First impressions can be implemented in economics and job interviews. A 2000 study focused on job face-to-face interviews with two groups of people being interviewed: more conventionally attractive and less conventionally attractive individuals. On a 2-point scale, more conventionally attractive individuals were rated higher in an interviewer's ratings of abilities by 0.5 than less attractive [Nor87]. Since the first impression is an individual's appearance in an encounter, a nicer appearance or first impression sways the interviewer's beliefs of abilities even if the interviewees have the same abilities. Furthermore, through brands and analysts, a 2020 study focused on first pieces of information for analysts to evaluate a company's success. The results followed the first impression bias: if a firm performs well the year before an analyst follows that firm, "the analyst is optimistic in subsequent EPS forecasts" and vice versa [Hir19].

To take advantage of such irrationalities, first pieces of information need to be well-placed to create a good first impression for a brand.

#### 3.2 Stimulations

A stimulus is "any sensory input which arouses an individual's sensory organs" [Par84]. Upon presentation of stimuli, "affective and cognitive responses are posited" to evaluate a specific product. "Product Sensory Cue Availability" and "Prior Affect for Sensory Cue" both contribute to the affective response to a stimulus, which computes cognitive responses and perceived product quality [Par84]. Mital from 1988 study states "affective responses to stimuli will undergo an imagery building process that results in an image of the consumer enjoying the affective experiences associated with the product" [Mit88]. In other words, stimuli trigger an emotional response, causing a cognitive reaction and assumptions about specific products relative to the levels of stimulation.

Through a 1998 study in which experimenters gave participants stimuli before tasting ice cream, such as a three-step questionnaire, a booklet, examining, smelling, and looking at the ice cream, the results were shocking: "ice cream may be more affective as one imagines eating it," than when one "actually eats the ice cream" [Par84]. Eliciting more affective stimulations formulates more cognitive responses, sway, and increased perceived product quality.

By distributing specific stimuli to consumers, consumers' cognitive responses would be enhanced, improving "perceived product quality" when customers walk through the door.

#### 3.3 Walmart's Layout: Critiques

Walmart is especially critical for a good first impression to the consumer, as it falls victim to the price-quality inference. The price-quality inference, or the "tendency to intuitively expect a positive relationship between price and quality," is especially prevalent, as low prices allude to low-quality products [Nei19].

Referencing the 2019 Pinellas Park Wal-Mart layout below, the Walmart displays a large variety of products in their building. There are two entrances placed at the front of the store, one on each side of the registers. The entrances are quite far from each other, giving each entrance consumers their own first impression to the simulations they may perceive.

The left entrance consumers enter the store, walk down a narrow hallway, and are greeted by Mens' wear, wafts of bakery items and produce, and the frozen section. Its main sightings are a long path of grocery aisles and clothing styles. At the end of the path lay drink machines with more infant clothing. Walking down a narrow hallway, an example of "hard architecture," is a tight space for shoppers to walk through, producing "subtle negative psychological effects" of feeling uncomfortable and tight [War22]. Afterwards, consumers see a bakery on the left and the mens' wear section on the right. The usage of warm, sweet aromas creates "sensory cues," increasing shoppers' affective responses [Par84]. These sweet aromas produce a cognitive response of being fresh and high-quality. However, partnered with mens' wear, cognitive dissonance occurs: the shift from warm bakeries to mens' wear is too drastic, leaving customers dumbfounded on Walmart's branding.

The right entrance enters the store, walks through a presumably still narrow hallway, and is greeted by jewelry, pharmacy, health and beauty aids, registers, candy, home offices, cards, and ladies' wear. The simulations give a sense of security through the abundance of health products and a perception of high-quality products through jewelry. However, the juxtaposition between the jewelry and candy aisle detaches from the attempt at high-quality branding. Instead, Walmart customers seem confused as to the theme of Walmart; even though Walmart is a store of all categories of products, the aisles are distracting to wander through as a specific brand.

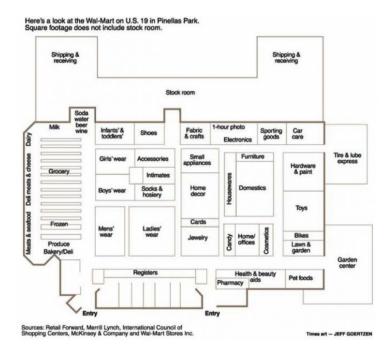


Figure 2: Screenshot from https://forum.artofmemory.com/t/walmart-palace/31717 [Zen16].

Crucially, both entrances do not have the same simulations. The leftward entrance has warm, sweet aromas with sight and smell but contains clothing products. The rightward entrance has high-quality products and senses of security but is crowded through multiple aisles. Shoppers on the left will not have the same first impression and cognitive sway than shoppers on the right. This gives an unequal shopping experience and is unreliable for creating good stimulations for shoppers.

#### 3.4 Solutions

To elicit equal stimulations from both entrances while still eliciting a highquality branding of Walmart, the following solutions are made for the 2019 Pinellas Park Wal-Mart layout. Tailored to a specific store, other Walmart stores are able to utilize similar stimulations.

1: Place the Bakery/Deli ahead of the registers into the "Men's wear" and "Ladies' wear" section. This could be an open bakery where shoppers can observe the bakers baking pastries. An open bakery not only creates visual stimulations, but also circulates warm aromas throughout the store giving both entrances the smell stimulation.

2: Shift the grocery aisle to where the bakery was. Groceries sprout pre-

sumptions that Walmart is fresh, organic, and high-quality, straying away from the cheap products filled with artificial flavoring and unhealthy ingredients that Walmart products contain.

3: Swap the jewelry store with the "Boys' wear" and "socks" compartment. Swap the pharmacy with the "girls' wear," "accessories," "infantries," "shoes," and "infants and toddlers" compartments. By placing jewelry—a high-quality item—in the middle of the store where both entrance paths walk through, shoppers from both entrances will reference the quality of Walmart products. Similar to the jewelry, having a pharmacy readily available in the middle back of the store gives a sense of security and safety to all shoppers.

By implementing these expensive solutions, shoppers will have quality stimulations to elicit emotions of security, quality, and freshness from Walmart's delicious products. Increasing the perceived quality of items, consumers will be more motivated and willing to purchase Walmart products because they are getting a better deal: a high-quality item for a low price.

## 4 Customer Loyalty

#### 4.1 Sunk Cost Bias

The sunk cost bias is an irrational cognitive process that is the "tendency to continue an endeavor once an investment in money, effort, or time has been made" [Haf13]. Also known as the sunk cost fallacy, individuals continue to strive for a specific action after they have exerted lots of effort into something, thinking that the sunk costs—investments "already incurred that can't be recovered"—would be going to waste in switching to another option [The22]. As the sunk costs increase, the bias to continue with the status quo process increases; individuals believe it is better to continue pursuing that process than to switch to a different, more effective idea.

A 1985 study from Arkes and Blumer discovered the sunk cost bias, following an experiment on groups of "theater season tickets buyers" arbitrarily paying different prices for tickets: full price and discounted prices. By monitoring the number of times participants went to the theater during that game, those that paid more for the ticket visited the theater more frequently than those that paid less, displaying the disparities in amount of sunk costs—effort and money spent into purchasing the tickets—to the increased bias.

The sunk cost bias is placed economically as well. A 2002 study conducted experiments to track customer reluctance to switch costs for services. Out of the six types of sunk costs, the lost performance cost carried the most weight in peoples' economic decisions [Jon02].

However, to even achieve the sunk cost bias, there must already be some effort exerted into the action. Thus, to create this irrationality, strong motivations for consumers to place effort into an action are crucial.

#### 4.2 Chunking

From the previous section on the Principle of Least Effort, individuals will "choose a course of action that require[s] the smallest amount of effort" [APA22b]. To even trigger the sunk cost bias, consumers must place effort—presumably minimal—into a difficult task.

The process of chunking, or cutting "the process into smaller sections," makes large actions seem smaller through chunking the task up into smaller, individual actions [A22]. By allowing the readers and consumers to digest information easier through smaller actions, it decreases the perceived effort of the action.

The example below illustrates chunking. The questionnaire on the left states a long list of questions for the reader to answer through. The questions are squished together in a hard-to-read font and displays a large amount of buttons. However, the questionnaire on the right—with the same amount of questions and effort—displays three questions with a progress bar beneath. Encouraging words of "just a few steps and you are done" trick the consumer to think the action is not mentally challenging. The disparity in perceived effort of the two questionnaires is due to the formatting, simplicity, and chunking of actions into smaller, digestible pieces.

Thir	king about your experience with in	lernet retaile	, please in	ficate your	opinions abe	out the follow	ring statements:
		Strongly	Agree	Neutral	Disagree	Strongly	Not sure
l pref retail	er making a purchase from this internet er ever using local offices, mails or stones.	0	0	0	0	0	0
	ler this internet retailer over other home ping services (i.e. catalogs, "1-600" tes or television).	0	0	0	0	0	0
This or se	internet retailer doesn't just sell products rvices - E entertains me.	0	0	0	0	0	0
1 most	ived special rewards and discounts from business with this internet retailer.	0	0	0	0	0	0
I say to off	positive things about this internet retailer ser people.	0	0	0	0	0	0
l con choic	sider this internet retailer to be my first a when I need products or services of this	0	0	0	0	0	0
	lock" of this Internet is appealing to me.	0	0	0	0	0	0
đ	ly like doing business with this Internet et.	0	0	0	0	0	0
	nd to continue to visit this internet or's sile in the future.	0	0	0	0	0	0
10	nd to purchase from this linternet retailer in dure.	0	0	0	0	0	0
	internet setaller is one of the first places I d to look when I need the type of handlise or services it provides.	0	0	0	0	0	0
it wo to se retail	ald require a lot time and effort on my port, I up an account with another internet or.	0	0	0	0	0	0
non Ton	aid take a lot of time and energy to look for ser internet retailer for this type of product.	0	0	0	0	0	0
	roducts and/or services I purchased from ternet retailer were a good value. ry doing business with this Internet retailer.	0	0	0	0	0	0

Figure 3: Screenshots from https://insidebe.com/articles/nudge-your-customers-to-take-action/ [B22].

#### 4.3 Walmart's Membership Program: Critiques

Walmart currently offers a Customer Rewards Program: a program in which individuals place effort and exertion to gain benefits redeemable at Walmart locations. Walmart's new model "Walmart+" prices the membership at \$98/year for benefits such as free shipping, at-home ordering, and decreased prices on gas and fuel. However, there is no specific incentive for customers to continue purchasing products other than convenience; there is no consumer loyalty for long-term customers.

As of August 15, 2022, the Walmart+ website for reduced prices on gas and fuel were seen below. Members save up to 10 cents per gallon at Exxon,

Mobil, Walmart, and Murphy stations. But other than the cheaper prices in purchasing gas, there is no other exponentially increasing benefit to the program, making customers view this benefit as a stable benefit and not something to work towards.



Figure 4: Screenshot from https://www.walmart.com/plus [Pan22a].

#### 4.4 Solutions

To further incentivize shoppers to use Walmart products, the following propositions are made. The costs to create such solutions would be in software development and in small rewards. This profit motive will not decrease revenue from the amount of rewards distributed, as the dollars spent to get the reward would outweigh the value of the reward itself.

1: Added with Walmart+, a progress bar for dollars spent at Walmartaffiliated stores, Walmart+ deliveries, Walmart gas stations, and Walmart products is placed at the top of the online interface. The progress bar needs to be simplistic and user friendly to not overwhelm the consumer.

2: Progress points relative to dollars spent are distributed to customers after every purchase; in accumulating a specific total of points, consumers are rewarded with an item.

3: Encouraging messages and progress chunking make customers start spending money and exerting effort to reach the point goal.

By placing a progress bar with a reward, consumers are motivated to get the reward, and more than halfway through, the Walmart+ members are affected by the sunk cost bias, motivating shoppers to continue shopping at Walmart stores. Through chunking and visually appealing progress checks, consumers are tricked to keep shopping at Walmart, increasing customer loyalty and long-term customers.

## 5 Conclusion

Through the lens of behavioral economics, the paper analyzes online interface pricing, stimulations, and customer loyalty for the food retailer Walmart. Walmart, the largest food retailer in the United States, boasts its cheap prices with a plethora of products; Walmart's main competitive advantage is through its low prices and cutting large costs.

Utilizing the anchoring bias, the first impression bias, and the sunk cost bias, cognitive biases and irrationalities on Walmart products are mitigated.

The anchoring bias is a cognitive irrationality in which individuals "anchor" to previous information heard for future independent decisions. Walmart's online interface contains ineffective anchoring mechanisms, confusing discount percentages, and does not capitalize on color psychology. The following solutions address the critiques listed respectively: placing the current Walmart price after the crossed-out price, giving easy-to-compute percentage or dollar amount discounts, and crossing out previous prices in red to elicit passion and emotion.

The first impression bias sways consumers' beliefs based on the first piece of information they perceive. Thus, by increasing stimulations that would trigger affective stimulations, cognitive thought processes are created to improve perceived product quality. In a Walmart layout, the left and right entrances are exposed to different, confusing stimulations. By shifting compartments around and placing warm aromas, jewelry stores, and pharmaceutical outlets in the middle aisle of stores, both entrances gain stimulations of security, quality, and freshness.

The sunk cost bias creates motivation to continue at a specific action if lots of effort and action had already been taken for that action. To even get customers to place effort, chunking is utilized in a Walmart+ customer loyalty program to incentivize consumers to purchase Walmart products. Relative to dollars spent, a point goal is placed with a progress bar; in reaching the point goal, customers receive a reward. Halfway through the progress, customers fall victim to the sunk cost bias, increasing customer loyalty through long-term shopping.

From the three biases, behavioral economics allows individuals to change consumer beliefs and perceptions of a product's quality. Therefore, the psychological aspects of pricing, quality perception, and incentivization must be taken into consideration in branding, and in this case, Walmart.

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