

It Doesn't Hurt to Ask: Assessing Default Effects in a Brazilian Gas Station

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Abstract

When an option is set as the default and as a result people are more likely to choose it, we call it a default effect. In this research we investigated whether drivers were more likely to choose a more expensive type of fuel if it was set as the default option by a mere suggestion from the gas station attendant. In the first study, we collected data showing that drivers did not believe they could be affected by default options. The second study, however, refuted these findings: we conducted a field experiment in which a trivial question asked by the gas station attendant, whose effect was the creation of a default option, led drivers to purchase a product they would not otherwise have considered. We thus provide evidence that default effects might be even more pervasive in real situations with real consumers than what one would expect from controlled laboratory experiments.

Keywords: default effect, consumer behavior

1. Introduction

Studies of judgment and decision making have shown that people often deviate from what the rational agent model prescribes. Simon (1957) advanced the concept of bounded rationality: cognitive limitations restrict our capacity to solve complex problems according to the standards required by rational behavior. Tversky and Kahneman then showed that people use computational shortcuts and simplifying mental strategies to deal with this bounded rationality (Tversky & Kahneman, 1974; Kahneman & Tversky, 1979, 1984).

The use of simplifying strategies seems to be especially important in consumer choices as the exponential growth in the supply of goods and services has increased the complexity of what used to be trivial decisions. The sheer number of available options in the market often requires that consumers execute various processes from the understanding of attributes to the recovery of relevant stored information and to the constant comparisons and evaluations of the possible consequences of each decision (Johnson, 2008).

In this context, this article investigates a factor that has been identified as having a significant impact on consumer choices: the existence of default options. Brown and Krishna (2004) characterize a default option as an alternative that a consumer will adopt unless he or she explicitly disagrees. The effect of default options is ubiquitous because people tend to simply accept the first suggestion or some pre-chosen or predetermined option.

To illustrate the so-called default effect, suppose that you are registering to access an online newspaper. There is a box at the end of the form that must be marked if you wish to receive information and future offers from that newspaper and associated organizations. This box may be unmarked and you will have to mark it if you agree, or marked and you will have to unmark it if you do not. This is a simple example where the effort required to actively make a choice is extremely low: just click or not click on a box that appears on the screen. Yet experiments show that the number of consumers who opt to receive this information and offers differs significantly depending on the way this option is presented (Carroll, Choi, Laibson, Madrian, & Metrick, 2009). People who fill in a form with a marked box have a greater tendency to accept to receive new offers than people who fill in a form with an unmarked box. Most respondents leave the box the way it is presented, characterizing the so-called default effect that has been observed in various contexts (Madrian & Shea, 2001; Abadie & Gay,

2006).

The aim of this study is to document the occurrence of the default effect in a real consumer context in which its existence should not be taken for granted and its impact can be quite consequential. The question we tried to answer is: can the offer of a more expensive type of gasoline — in effect making it the default option — by a gas station attendant influence consumers' choice? Drivers, as we will show, usually arrive at the gas station with the intention of filling their car tanks with the cheaper type of gasoline. Hence, it is not clear that a sudden, arbitrary attribution of the more expensive type as the default option will have any effect, especially because the consumer will bear the cost and the agent of the proposal (the gas station represented by the attendant) will benefit from such an upgrade.

The importance of obtaining a better understanding of consumer behavior, particularly in the fuel market, becomes evident when we examine its sales volume. According to the National Association of Fuel and Lubricant Distributors [SINDICOM], 96.2 billion liters of fuel are sold annually on the Brazilian market (2008 data published in the 2009 yearbook), with gasoline sold in gas stations accounting for over 25 billion liters worth more than 20 billion dollars.

2. Theoretical Background

2.1 Empirical Evidence for the Default Effect

As mentioned above, the occurrence of default options is very common on internet site forms in which options are pre-marked with the aim of increasing respondents' acquiescence (Johnson, Bellman, & Lohse, 2002; Smith, Goldstein & Johnson, 2009). Another situation in which consumers are led to accept a predetermined decision is in the context of the "assistant" model for choosing products or installing programs. In the first case some firms provide an electronic form for consumers to inform their preferences and on completion the program indicates a product that better meets their needs. In the case of software, installation assistants often have a standard option where the user does not need to make any choice and the installation software makes all the decisions automatically.

These are examples of day-to-day situations in which we verify the default effect in decisions that bear no significant risk. However, studies have already identified the occurrence of the default effect in very important and risky choices. Abadie and Gay (2006) collected statistical data on organ donation in 22 countries over a period of ten years and their findings showed that countries whose legislation authorizes a presumed consent option have 25% to 30% higher donation rates. In another study on the same theme, Johnson and Goldstein (2003) studied European countries from 1991 to 2001 and found 16.3% more donors, on average, in countries whose legislation stipulated donation as a default option – the authors cite some cases with increases of over 50%, representing an increase of more than six million potential donors per year.

Other contexts that provide empirical evidence of the existence of default effects are: retirement plans and investment funds (Madrian & Shea, 2001), insurance policies (Johnson, Hershey, Meszaros, & Kunreuther, 1993), choice of car options (Park, Jun, & Macinnis, 2000), pizza toppings (Levin, Schreiber, Lauriola, & Gaeth, 2002) and even agreement with the practice of torture (Crandall, Eidelman, Skitka, & Morgan, 2009).

Previous research provides various explanations for the default effect: (1) reduction of cognitive effort, (2) possible endorsement insinuated by the pre-selection of the option itself, i.e. the impression that a pre-selected option must be the best choice and (3) loss aversion. We describe each of these explanations in the following section.

2.2 Existing Explanations for the Default Effect

2.2.1 Reduction of Cognitive Effort

One of the reasons the default effect occurs is the innate desire to reduce the cognitive effort required by a decision (Kahneman, 2011; Samuelson & Zeckhauser, 1988). In most cases, the default option attracts the attention of the decision maker just because it has been singled out. And consumers often accept the default option because they do not realize there is a choice at stake (Brown & Krishna, 2004).

There are three factors that will affect consumers' desire to reduce cognitive effort and hence resort to the default option: involvement, recurrence of the purchase decision, and complexity. Clarke and Belt (1979) suggest that the effort and diligence that a consumer is willing to apply in a purchase is directly proportional to his or her involvement with the item to be purchased. Hoyer (1984) expands this idea to recurring purchases. He suggests that consumers tend to use very simple or heuristic rules in repeated and relatively unimportant purchases in order to make a merely satisfactory (i.e., not necessarily the best) choice, with the lowest possible effort. The

lower the involvement and the greater the decision maker's recurrence of the decision, the lower the cognitive effort that the decision maker will be willing to employ, which in turn will increase the likelihood of resorting to the default option. Finally, Cappelletti, Mittone and Ploner (2008) identified that the complexity of decisions may favor the default effect. They suggest that the greater the number of attributes involved in a choice, the greater the likelihood that the consumer will be influenced by the establishment of default options in order to minimize the cognitive effort involved.

2.2.2 Implicit Endorsement

Another reason for the default effect to occur is that consumers often judge that the default option constitutes an implicit endorsement from the party that is presenting the alternatives. Consumers often delegate their decision-making power to a third party they believe is better qualified to offer the most adequate option (Dinner, Johnson, Goldstein, & Liu, 2009). Such a third party is given "powers of attorney," looking for alternatives and offering the option that best meets consumers' needs. Instead of assessing options and attributes themselves, consumers just accept the attorney's recommendation (Aggarwal, 1998).

Sunstein and Thaler (2003), Brown and Krishna (2004) and McKenzie, Liersch and Finkelstein (2006) suggest that the offering of a default option in itself constitutes a kind of hidden communication that leads the decision maker to infer that the suggested option is in fact the recommended one. In the case of the gas station the consumer probably perceives the option suggested by the attendant as an implicit endorsement, thus increasing the default effect and consequently the acceptance of the option offered.

2.2.3 Loss Aversion

Prospect theory (Kahneman and Tversky, 1979) advances the notion of loss aversion, the fact that losses loom larger than corresponding gains. In other words, a loss of say \$100 is felt more intensely than a gain of \$100. If the default option is perceived as something consumers own and foregoing this option is seen as a loss, then the concept of loss aversion means that this loss will be felt more intensely than the gain that could be obtained by adopting the non-default option. Such a phenomenon has been widely demonstrated and in its more general form has also become known as the status quo bias (Kahneman, Knetsch, & Thaler, 1991). Moreover, given that default options are the ones expected to be chosen, deviations are "natural candidates for regret and blame" (Kahneman, 2011).

3. Study 1: A Survey about Drivers' Refueling Habits

We recruited 101 MBA students at a business school in Rio de Janeiro to complete a web-based survey. Five questionnaires were discarded because they contained unanswered questions or because respondents declared not having a car.

We asked respondents whether they often drove a car, how often they refueled, and which fuel they used. In addition, we asked 11 questions about their beliefs, intentions, and behaviors as drivers. They indicated in a scale from 0 ("I completely disagree") to 6 ("I completely agree") the extent to which they agreed with the statements listed in Table 1.

Although all consumers eventually need to refuel their cars, it is not clear whether the purchase of fuel should be regarded as recurrent. Forty two respondents indicated they refuel at least once a week (43.8%), whereas 54 indicated otherwise (56.2%). The Brazilian market offers ethanol (fuel alcohol), diesel, and three types of gasoline – regular, additivized, and premium. Regular gasoline and alcohol were reported to be the most frequently used types of fuel, with 67 and 52 mentions respectively. Additivized gasoline came third with 23 mentions. If we consider only gasoline mentions, regular gasoline accounted for 71% and additivized gasoline for 24% of mentions.

As shown in Table 1, the 11 questions portrayed a clear picture of their beliefs, intentions, and behaviors as driver.

Table 1. Descriptive statistics of questionnaire replies

	Question	Mean	SD	t-stat*	p-value
1	I may change my mind if I am offered a fuel that is different from the one I intended to use	2.06	.19	- 4.84	< .001
2	I know what fuel I am going to put in my car before going to the gas station	4.79	.16	11.00	< .001

3	I think the attendant can help me decide which is the best fuel for the car	.91	.13	- 15.90	< .001
4	I don't like wasting time in the gas station deciding which fuel I'm going to use to refuel the car	4.24	.21	5.86	< .001
5	I always use the most expensive fuel	.88	.14	- 15.73	< .001
6	There is a difference between regular and additivized gasoline	4.67	.17	10.08	< .001
7	I always use the same fuel	3.18	.24	.73	> .40
8	I believe the attendant knows which is the best fuel for the car	.69	.12	- 19.32	< .001
9	I like going to the gas station to refuel the car	2.31	.21	- 3.20	< .01
10	I think it's important to choose the type of fuel	4.36	.18	7.45	< .001
11	I always use the cheapest fuel	2.64	.23	- 1.57	> .10

* The t-statistic resulted from a t-test of whether the mean is equal to 3, which is the mid-point of the response scale (its value is positive if it is higher than 3 and negative if it is lower than 3).

It should be noted that, according to the answers to question 2, consumers arrive at the gas station having already decided which fuel they are going to purchase. Consumers do not think they will change their minds (question 1) nor that the gas attendant can help them with their choice (question 3 and 8). It is not clear whether consumers are involved with the purchase of fuel. Whereas questions 4 and 9 suggest refueling is a chore that cannot be avoided, 10 shows that choosing the type of fuel is important. The remaining question does not allow clear inferences.

There is no empirical evidence as to whether the purchase of fuel is or is not recurrent and whether consumers feel involved. However, from what consumers themselves report, there is reason to believe that the default effect may not hold in such a consumer context: drivers were quite assertive regarding their conviction about the fuel they choose as well as about the disbelief that the gas station attendant is able to influence their choice. The next study - a field experiment - aims to address this question.

4. Study 2: A Field Experiment to Test the Default Effect in a Gas Station

The previous study cast doubt on whether a default effect could occur in gas stations. We thus conducted a field experiment to gather empirical evidence that this might indeed be the case.

4.1 Method

We conducted an experiment to test the default effect in a gas station located in an upscale neighborhood in Rio de Janeiro. We obtained full support from the gas station manager, who instructed the attendants to comply with our requests. In this gas station consumers could choose between regular and additivized gasoline without moving their cars to another pump. During five consecutive days 225 drivers participated in the experiment.

Drivers were assigned to two between-subjects conditions. In the control condition, gas attendants were instructed to simply say "Good morning", "Good afternoon" or "Good evening" on greeting the drivers. In the default option condition, gas station attendants were instructed to say "Good morning", "Good afternoon" or "Good evening," and immediately after offer the additivized gasoline by just asking "Additivized gasoline?" The six gas station attendants that took part in the experiment were not informed about the purpose of the study and from time to time were rotated across the two experimental conditions.

Unbeknownst to the drivers, the experimenter noted down the condition the driver was allocated to and the fuel chosen as well as additional information such as the time the driver was served, the pump used, the name of the attendant, and the driver's gender. We predicted that drivers in the default condition would be more likely to purchase the additivized gasoline than drivers in the control condition.

4.2 Results

We discarded 21 observations (9.3%) because the attendant did not follow the experimental procedure correctly. We also excluded 36 drivers (16.0%) who had chosen either ethanol or premium gasoline (the pattern of results does not change if we include these drivers in the analysis). The reason for this exclusion is that ethanol is a different type of fuel and premium gasoline is much more expensive. Therefore, we conducted an analysis on 168 observations, 84 in the control condition and 84 in the default option condition. The results were consistent

with our prediction. The percentage of drivers who purchased additivized gasoline was higher in the default option condition than in the control condition (54.8% vs. 21.4%; $\chi^2(1) = 19.79, p < .001$). A simple intervention that required minimal effort on the part of the attendant—he asked a two-word question—led drivers to purchase an option that was more expensive than the one they had planned even though they claimed not to follow the gas attendant's suggestions

5. Conclusion

This study showed that offering a certain product or service as a default option may influence the consumer's behavior. A mere question from the gas station attendant had a significant impact on the consumer's refueling choice (the number of consumers who opted for the more expensive product increased more than twofold). This result has direct implications for a business's billing and the way patterns of service are developed. In the specific case of the gasoline retailing industry, where very large volumes of fuel are commercialized and costs are predominantly fixed, any small increase in unit margins, obtained by migrating from regular to additivized gasoline, can have a significant impact on firms' profitability.

As this study used a small sample in only one gas station, it is possible that consumers with different profiles would behave differently in other gas stations. The station chosen serves high income customers, so the difference in price between products constitutes a low risk factor. Given that risk is one of the dimensions of involvement and low involvement is positively related to the occurrence of the default effect, it is not clear whether the results would be the same in circumstances in which price was the most important variable in the consumer's decision. This study nevertheless provides evidence that the default effect is real and that in some situations can have a great influence on consumers' decisions.

It should be recorded that when asked through the questionnaire, consumers in general alleged that they would not change their minds at the moment of purchase even if they were offered another product. As the majority of respondents declared that they used regular gasoline – a type of behavior that was demonstrated in the control group, we can conclude (along with various other studies) that consumers show a limited awareness of their cognitive processes during the moment of decision. Companies should not underestimate the power of this simple intervention, the assignment of one option as the default. Neither should consumers, regardless of whether or not they benefit from such an effect.

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