



Harnessing behavioral science to design disposable shopping bag regulations

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abstract

Policies to curb the use of disposable shopping bags take two main forms: (a) They provide *market-based incentives*, imposing fees or taxes on disposable shopping bags or offering rewards for bringing reusable bags from home, or (b) they impose *command-and-control policies*, which ban certain types of disposable shopping bags altogether. In this article, we review evidence on the effectiveness of these policy design choices through a behavioral economics lens and highlight best practices for policymakers considering similar legislation.

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In the United States alone, more than 400 laws aim to curb the use of disposable (single-use) shopping bags, particularly those made of plastic. Policies implemented by governments or retailers typically impose fees for disposable shopping bags, give rewards for bringing reusable bags, or ban stores from supplying certain types of disposable shopping bags. In this article, we review research on these policies and apply insights from behavioral economics to suggest strategies for enhancing their success. Behavioral economics can be helpful in this situation because, unlike standard economics (which assumes that consumers make decisions by carefully tallying the costs and benefits of their options), it reveals ways that psychological factors, such as the salience of a fee or the awareness of social norms, can influence how people respond to regulatory interventions.¹

Why Regulate Disposable Shopping Bags?

Each year, Americans consume 100 billion disposable plastic shopping bags.^{2,3} When the bags are not accumulating in landfills, they clog storm drains, seep into waterways, and hang on trees, costing local governments an estimated \$3 to \$8 billion per year in aggregate to clean up.⁴ Beyond imposing cleanup costs, plastic bags create environmental costs that can extend beyond jurisdictional borders. For example, one team of researchers calculates that 2%–5% of plastic waste ends up in the ocean.⁵ There, plastic items do not degrade but instead break into ever smaller pieces, which can harm sea animals that mistake plastic for food.⁶

Paper shopping bags might initially seem to be a better alternative because they are biodegradable, but they have their own drawbacks. They are more environmentally costly to transport because they are heavier, and their cycle of production, use, and disposal leaves a larger carbon footprint—that is, the cycle results in higher emissions of carbon dioxide and other greenhouse gases. The United Kingdom’s Environment Agency estimates that paper bags’ carbon footprint is 4 times as large as that of typical plastic shopping bags.⁷ Typical

plastic shopping bags are thin and lightweight, measuring less than 2.25 mils (2.25 thousandths of an inch) thick and weighing about 6 grams. This means they require less material to produce and transport—and consequently have a lower carbon footprint—than thicker types of bags.

The economic case for governmental regulation of disposable bags is based largely on the existence of what economists call *environmental externalities*: environmental consequences of producing a product or service that are not considered when prices are set. The presence of environmental externalities means the producers and users of disposable shopping bags do not pay the costs that the bags impose on the environment. For example, most plastic shopping bags cost U.S. retailers an average of 3 cents each,⁴ while cities spend up to 8 cents per bag on litter control.⁸ Regulations are also needed because the way in which most stores charge for the bags encourages unrestrained use. Specifically, retailers usually roll the cost of the bags into the overall price of groceries—as they do with the cost of the store’s air conditioning or the cashiers’ salaries—rather than directly charging for the bags. Thus, instead of calculating the cost of each bag when deciding how many to use, customers perceive the bags to be free, which leads them to use more than they would if they paid for each bag individually.⁹ They may go home with still more bags than they need if cashiers who help with bagging prioritize time efficiency over minimizing bag use.

In economic terms, the damages disposable shopping bags impose on the environment, marine ecosystems in particular, as well as the high cleanup costs they impose on governments represent a failure of the free-market system (that is, where governments impose few regulations on individuals and businesses) to meet society’s needs efficiently. Economic principles indicate that such failure requires governmental intervention. The question is, Which interventions are most likely to be successful? This is where behavioral economic insights into consumer behavior have much to offer. Behavioral economics studies the effects

Core Findings

What is the issue?

Reducing environmental waste means encouraging consumers to curb their use of disposable shopping bags. Two types of interventions targeted at doing so are *market-based strategies*, which give consumers a financial incentive to change their behavior, and *command-and-control approaches*, which regulate consumer behavior directly. Leveraging insights from behavioral science is key to ensuring that these interventions can be effective.

How can you act?

Selected recommendations include:

- 1) Levying taxes on disposable shopping bags to capitalize on people’s loss aversion
- 2) Imposing hybrid bans that combine bans on thin plastic bags with fees for alternative disposable bags

Who should take the lead?

Environmental policymakers and organization leaders

of psychological, emotional, and social factors on economic decisionmaking. In this article, we bring together principles from standard economics and behavioral science to assess recent regulations on the use of disposable bags.

Existing Policies in Brief

Governments around the world have implemented a variety of policies to regulate the use of disposable shopping bags and thereby limit their costs to the environment and to government budgets. Although varied, these policies can be divided into two main approaches: (a) *market-based* strategies, which give consumers a financial incentive to change their behavior, and (b) *command-and-control* approaches, which regulate consumer behavior directly, such as by banning certain activities. Policies classify disposable shopping bags into three types: thin plastic shopping bags (under 2.25 mils thick), thick plastic shopping bags (over 2.25 mils thick, roughly the thickness of a commercial garbage bag), and paper shopping bags. Some bag policies regulate only thin plastic shopping bags, while others address disposable shopping bags more broadly without singling out thin plastic versions. Table 1 summarizes the most commonly used governmental and retailer policies for limiting the use of disposable shopping bags.

“customers perceive the bags to be free”

Market-Based Strategies

Market-based incentives to discourage disposable bag use typically take the form of a small tax or fee charged for each such bag used by a customer at the checkout. A well-known example is the Irish “Plastax,” a €0.15 fee for every plastic shopping bag.¹⁰ In 2010, Washington, DC, became the first city in the United States to adopt a similar policy, which placed a 5-cent tax on all plastic or paper disposable shopping bags provided by grocery retailers.¹¹ Additionally, many retailers have proactively adopted their own policies. One common approach offers customers a bonus—usually between 3 and 5 cents—for each reusable bag a customer uses. Some of the largest grocery chains in the United States have tried this approach, including Kroger, Safeway, Giant, Target, and Whole Foods.

Command-and-Control Approaches

Command-and-control policies set standards for allowable products or actions, banning those that do not meet the standards. In the case of disposable bags, these policies typically ban thin plastic shopping bags. In 2002, Bangladesh became the first country to impose such

Table 1. Types of policies to limit use of disposable shopping bags

Market-based incentives		Command-and-control policies	
Disposable bag taxes	Reusable bag bonus	Stand-alone bans	Hybrid bans
Small tax or fee per disposable shopping bag used by customers; issued at point of sale	Small bonus given to customers by retailers for using reusable shopping bags at checkout	Prohibits use of plastic shopping bags under a certain thickness (generally 2.25 mils thick) at checkout	Prohibits use of plastic shopping bags under a certain thickness and requires a fee (usually small) for all remaining types of shopping bags
<ul style="list-style-type: none"> Denmark (1994) Ireland (2002) South Africa (2004) Washington, DC (2010) Boulder, CO (2013) Israel (2017) Spain (2018) Peru (2019) 	<ul style="list-style-type: none"> Kroger Safeway Giant Target Whole Foods Trader Joe’s Ralphs 	<ul style="list-style-type: none"> Bangladesh (2002) San Francisco, CA (2007; replaced with hybrid ban in 2012) Chicago, IL (2015; replaced with tax in 2017) Kenya (2017) New York (2020; hybrid ban opt-in) 	<ul style="list-style-type: none"> Seattle, WA (2012) California (2016) Boston, MA (2017) Minneapolis, MN (2017) Oregon (2020) Vermont (2020)

Source: <https://www.moneytalksnews.com/7-stores-where-bringing-your-own-bag-pays/>

a ban. Five years later, San Francisco became the first jurisdiction in the United States to pass a similar law, prohibiting stores from providing thin plastic shopping bags.

Currently, bans on thin plastic bags constitute the most common type of disposable bag regulation worldwide.¹² In the United States, more than 90% of state and local ordinances that regulate the provision of disposable bags incorporate a ban on thin plastic bags.¹³ The bans take one of two forms. *Stand-alone bans* restrict the use of traditional thin plastic shopping bags, often using a thickness cutoff similar to the one used in San Francisco while leaving other types of disposable shopping bags—such as paper bags or thicker plastic bags—unregulated. *Hybrid bans* pair bans on thin plastic bags with a minimum required fee for paper bags and reusable bags (usually between 5 and 10 cents), although stores can choose to sell paper and reusable shopping bags for more than the mandatory minimum.

Policy Recommendations

In this section, we provide several policy design recommendations, founded in both standard and behavioral economics, for governments and other policymakers interested in implementing disposable bag regulations. In each case, we summarize the theoretical rationale for the recommendation and review recent relevant evidence. We focus on research that used a *difference-in-differences* methodology, in which investigators compare bag use in a selected area before and after a policy change against bag use in similar places where no such policy change occurred. (Note A explains our rationale for focusing our discussion on studies that use this methodology.)

Lesson 1: Disposable Shopping Bag Taxes Are More Effective Than Reusable Bag Bonuses (That Is, Use Sticks, Not Carrots)

Standard economic theory suggests that the choice between the two common market-based policy designs—levying taxes on disposable shopping bags (that is, “sticks”) or offering bonuses for bringing one’s own bag

(that is, “carrots”)—should not matter as long as the taxes and bonuses have the same monetary value. Behavioral economics, however, teaches that people are loss averse, meaning they dislike losses more than they appreciate similar-sized gains.¹⁴ If customers are loss averse, a tax would be expected to be more effective than a bonus of the same magnitude. Empirical evidence of loss aversion has been documented in the field in several contexts, including among stock market investors,¹⁵ taxi drivers,¹⁶ and professional golfers.¹⁷ In this section, we describe recent work that indicates disposable bag taxes are effective tools for reducing disposable shopping bag use, whereas reusable bag bonuses are not.

One of the first evaluations of disposable bag taxes in the United States examined the effect of a 5-cent tax on disposable shopping bags in Montgomery County, Maryland.¹¹ This study used observational data on disposable and reusable bag use in the months just before and just after the tax was implemented at stores in Maryland (which experienced a policy change); Washington, DC (which had a 5-cent tax throughout the study period); and Virginia (which had proposed a tax but never passed one). The study found that prior to the tax, just over 80% of customers in Maryland used at least one disposable shopping bag, and that the tax decreased the proportion of customers using a disposable shopping bag by 42 percentage points. Studies that apply a similar methodology but use different data or evaluate policies in different cities find comparable results. For example, Taylor obtained similar results using scanner data from a large supermarket chain,¹⁸ and Homonoff et al. documented a comparable response to a 7-cent tax in Chicago—a 33 percentage point decrease in disposable shopping bag use.¹³

Similar evaluations of disposable bag charges have been conducted in several other countries. Using observational customer data, a team of researchers found that the implementation of a 2.5-cent to 4-cent tax on disposable shopping bags in the city of Buenos Aires led to an increase in the proportion of customers using

at least one reusable bag relative to the proportion doing so in Greater Buenos Aires (which was not subject to the tax), with the magnitude of the increase similar to that reported in U.S. studies.¹⁹ Cabrera et al. used administrative data on disposable bag use from retailers during a staggered rollout of a 7–10 cent tax in Uruguay, finding a roughly 80% decrease in the number of bags provided after the tax went into effect.²⁰

Elsewhere, two separate research teams turned to survey data to evaluate the effect on reusable bag use of a 5-cent single-use carrier bag levy in Toronto²¹ and a 5-pence charge in Wales.²² Both studies found statistically significant increases in reusable bag use; however, the magnitudes of these estimates are considerably smaller than those estimated in the U.S. and Latin American evaluations, possibly because of different baseline levels of reusable bag use, different data sources (observational data versus self-reported surveys), or other regional differences.

One interpretation of the large change in consumer behavior after the implementation of relatively small taxes is that many customers are just on the margin of bringing a reusable bag instead of taking a disposable shopping bag at the checkout. In other words, the cost a customer associates with bringing a reusable bag is no more than 5 cents per bag—otherwise, customers would continue to take disposable bags at the same rate that they always had. If a strictly financial calculus fully explained the results, a similar-sized bonus for supplying one's own reusable bags would be expected to be as effective as the tax. On the other hand, if loss aversion, rather than the size of the financial incentive, accounted for the findings, one would predict that a bonus would not be as effective as a tax at decreasing the use of disposable bags: People who would be moved by the pain of paying any tax but who did not otherwise care whether their wealth changed by pennies per bag would be unlikely to be swayed by even a 10-cent bonus.

In addition to estimating the effect of the 5-cent tax in Washington, DC, Homonoff looked at the effect of offering rewards for bringing reusable bags to stores.¹¹ When she compared disposable

“many customers are just on the margin of bringing a reusable bag”

shopping bag use at retailers in the DC area that offered a 5-cent reusable bag bonus with the use of disposable shopping bags at retailers that offered no bonus, she found no differences. This finding is supported by anecdotal evidence from retailers that reusable bag credits had little effect on reusable bag use, resulting in many retailers rolling back these incentives.²³ This asymmetry in customer responses to the two types of policies—a large change in behavior with a 5-cent tax, but no change in behavior with a 5-cent bonus—is consistent with a behavioral model of loss aversion and suggests that policymakers who are considering market-based incentives to discourage disposable bag use should choose to use sticks rather than carrots.

Lesson 2: A Disposable Shopping Bag Tax Does Not Have to Be Large to Be Effective

Proponents of disposable bag taxes have hotly debated the ideal size of the tax. Early failed legislation in California suggested charging a 2-cent fee per bag on all disposable plastic shopping bags as part of the Litter and Marine Debris Reduction and Recycling Act of 2003.²⁴ Two years later, San Francisco proposed a 17-cent fee on both plastic and paper bags, but the proposal was met with public opposition, causing policymakers to consider lower fees.²⁵ In 2008, Seattle became the first city in the United States to pass a disposable bag fee—20 cents on both plastic and paper bags—but before the fee was implemented, the policy was placed on a citywide ballot and voted down. Three years later, however, the city successfully implemented a policy that banned thin plastic shopping bags and charged a 5-cent fee for paper shopping bags. These battles suggest that policymakers face a trade-off when choosing the size of the bag fee: Higher fees may generate larger reductions in waste but are less likely to receive enough political support to be implemented.

To date, only limited evidence speaks to the optimal fee size, primarily because the majority of disposable bag fees in the United States are about the same amount—between 5 and 10 cents—although a few jurisdictions levy fees as high as 25 cents per bag. Nevertheless, the evidence described in the previous section suggests that even very small taxes on disposable bags can lead to large changes in behavior across a wide range of countries. Standard economics could explain this effect if shoppers perceive the cost of bringing their own bags as negligible. Results from Shampanier et al.'s work, however, imply that individuals do not apply standard cost-benefit rules when choosing between two goods if one of the goods is free.⁹ The researchers suggest that receiving a good for free not only makes the price attractive but also increases the good's perceived benefits; that is, people really like getting things for free. Hence, even a very small fee—say, 1 or 2 cents per bag—may lead to large decreases in disposable bag use because any price on a bag means it is no longer free.



In the United States, 100 billion disposable shopping bags are consumed annually.

>400

U.S. laws and regulations directed at disposable shopping bag use

\$3-8b

Average local government cleanup costs for disposable shopping bags

Behavioral science also suggests that, as we elaborate on next, small taxes on disposable bags can be effective despite their small size if they (a) make salient that each bag has a cost, (b) help to break the habit of using disposable bags and to form new bring-your-own habits, and (c) signal that using reusable bags is the new social norm.

Salience. A growing literature on tax salience demonstrates that if a tax is out of sight—that is, hidden in some way due to the placement of the tax, the payment method, or the complexity of the tax—then it is also out of mind when individuals make economic decisions relating to the taxed item. Conversely, if attention is drawn to the tax, its salience will lead people to keep the tax in mind when making decisions. For example, specifying the sales tax on the posted price of a good (rather than adding the tax in at the register as is usual) decreases sales of that good.²⁶ Similarly, reducing the salience of road tolls through the introduction of EZ-Pass reduced the responsiveness of drivers to changes in the toll.²⁷

Conversely, several examples in the field of environmental economics suggest that taxes are actually more salient than are traditional price changes. For example, one study showed that customers responded more to an increase in a gasoline tax than to a similarly sized increase in gas prices driven by oil price changes, citing the media coverage of the tax as what made it more salient.²⁸ Similarly, the introduction of a carbon tax in Canada led to a significantly larger change in the demand for gasoline than did an equivalent price change.²⁹ Consistent with these findings, Homonoff found near-perfect awareness of the DC area's disposable bag taxes, which suggests that salience may have contributed to the policy's effectiveness.¹¹

Habits. Customers may use disposable bags in part because they are simply in the habit of doing so; this habit is easy to maintain when stores provide the bags as a default. In other words, the decision to use a disposable shopping bag may not be a deliberate choice: At the register, consumers likely are not actively weighing the costs and benefits of each bag for each purchase but rather are acting on autopilot and making decisions based on the choices they have made in the past. When a disposable bag tax is introduced, the tax cues customers to make an active decision as to whether to pay for a disposable bag.³⁰ This choice, when repeated over time, can then serve as the foundation for a new habit. Taylor found evidence of habit formation after both disposable bag taxes and hybrid bans were imposed in supermarkets. The share of customers paying for disposable bags fluctuated only in the first two weeks after the policies were implemented and then remained constant for the rest of the one- to two-year sample period.¹⁸

Social Norms. Behavioral science research has shown that social comparison can be a powerful policy tool, especially in the area of environmental conservation.^{31,32} Because bringing one's own shopping bags is a highly visible behavior, even if a small tax initially prods just a few people to abandon disposable bags, this visible change in behavior can inspire many other shoppers to follow suit. In other words, the small tax can generate large effects through what is called a

social multiplier effect.³³ Research also suggests that policies may be particularly effective when they are government regulations rather than store policies because of the “expressive function of law”—the presumed ability of the passing of a law to signal a change in social norms.³⁴

Before turning to our next recommendation, it is worth pointing out that the change in consumer behavior in response to disposable bag taxes is much larger than responses to similar-sized taxes on other products, like sugar-sweetened beverages.^{35,36} This fact may simply suggest that the demand for disposable bags is more elastic. However, elements of the decisionmaking environment we have described that are unique to the case of disposable bags—the salience of the tax, habit formation, the visibility of the behavior, and the fact that disposable bags were originally considered free—may contribute to the particular effectiveness of disposable bag taxes.

Lesson 3: Avoid the Cobra Effect—Anticipate & Avoid Unintended Consequences

Certain policy design decisions may lead to unintended consequences—outcomes that are not anticipated and may run counter to the policy’s stated goal. When a policy decision exacerbates the problem it is meant to solve, the negative outcome is often called the *cobra effect*, in reference to a cautionary tale in which a policy that aimed to reduce the number of cobras in India by offering a reward for each captured snake led instead to an increase in the number of cobra breeders.³⁷ In the context of disposable bag regulation, the design and scope of the regulation will affect not only the use of the regulated bags but also the use of substitutes for those bags. Depending on the substitute, the policy could potentially do more environmental harm, undermining the intention of the policy.

In the case of stand-alone bans—the most common disposable shopping bag regulation—research suggests that the cure may be worse than the disease. Homonoff, Kao, Selman, and Seybolt evaluated the effect of a stand-alone thin plastic bag ban that was implemented in Chicago in 2015 and then repealed in 2017.¹³

“the cure may be worse than the disease”

Like the San Francisco policy mentioned earlier in this article, the ban applied to thin plastic shopping bags (less than 2.25 mils thick). In response to the Chicago ban and counter to the policy’s goal, retailers circumvented the regulation by offering customers free thick plastic bags, which were roughly five times the thickness of the standard plastic shopping bags that were on offer prior to the ban. The investigators observed customers in Chicago (which was covered by the ban) and in surrounding suburbs (which had no disposable bag regulations) and found that the proportion of Chicago shoppers using disposable bags did not change after the ban’s repeal. Additionally, when the ban was in place, over 40% of Chicago customers used a newly provided thick plastic bag. In other words, the ban failed to reduce the overall number of customers using disposable bags and, in fact, increased the environmental costs associated with disposable bag use by shifting customers toward more environmentally harmful disposable bags. (See note B for examples of similar responses to stand-alone bans in other cities.)

Hybrid bans may be preferable to stand-alone bans because they restrict the use of thin plastic shopping bags while leaving fewer disposable substitutes unregulated. In a 2016 study, Taylor and Villas-Boas evaluated the effect of such a policy in Richmond, California, which combined a ban on thin plastic bags with a 5-cent minimum fee for all other bags.⁴ Using observational data and comparing bag use before and after a policy change in regulated versus unregulated cities, the researchers found that, unlike the stand-alone ban in Chicago, the hybrid ban led to a substantial (roughly 35 percentage point) reduction in the use of disposable shopping bags. (See note C for more detail.)

In addition to increasing the use of thicker disposable bags at checkouts, policies that ban the use of thin plastic shopping bags can potentially have a different unintended consequence: the increased purchase of plastic trash

bags. This increase could occur, for instance, if consumers normally reuse plastic shopping bags as waste bin liners. The environmental benefits of restraining the use of plastic bags at checkout could then be reduced by the increased consumption of other kinds of plastic bags. In a 2019 study, Taylor measured the effects of various hybrid bans as they rolled out in different parts of California.³⁸ She found a large increase in sales of plastic trash bags, including a 120% increase in sales of small trash bags (the closest substitute for thin plastic shopping bags). The study showed that over a quarter of the reduction in plastic associated with the hybrid bans was offset by the increase in purchases of plastic trash bags. Understanding this unintended consequence allows policymakers to more accurately quantify the effects of disposable bag bans on bag use for their cost–benefit calculations.

Discussion

In this article, we have laid out several recommendations for designing disposable bag regulations that are based on behavioral science theory and supported by empirical evidence. Many of the studies we discussed evaluated policies implemented in economically developed countries, because that is where most of the studies that met our methodological criterion were conducted. However, we believe that the lessons we highlight would apply to many locales. In support of this view, a large number of studies using simple-difference designs (see note A) in a variety of countries have produced findings similar to the ones reported in this article: They demonstrate large decreases in disposable bag use in response to small fees and show minimal effects of stand-alone plastic bag bans.^{12,21}

Two common regulation designs adhere to our policy recommendations: levying taxes on disposable shopping bags and imposing hybrid bans that combine bans on thin plastic bags with fees for alternative disposable bags. Both policies have been shown to yield large decreases in disposable bag use. In contrast, the most common policy in the United States—the stand-alone ban on thin plastic bags, with

no regulations on other disposable bags, such as paper bags—may simply change the type of disposable bag a customer uses without decreasing overall use, and they may even cause retailers to offer free thicker plastic bags that are worse for the environment. When Homonoff et al. directly compared the environmental costs associated with disposable bag use across the life cycle of the bags (from production to cleanup) during a stand-alone ban in Chicago and during the imposition of a tax on all disposable shopping bags, they found that customers used the life-cycle cost equivalent of over six additional lightweight plastic bags per shopping trip during the ban relative to during the tax.¹³

It is important to note that the research we have discussed in this article also indicates that even small taxes on disposable bags can lead to major changes in consumer behavior. Hence, policymakers who want to decrease disposable bag use but worry about the economic burden that fees would place on consumers—especially low-income shoppers—may want to consider a very small tax. A small tax could still shift behavior to help the environment and would be more effective than no tax at all.

end notes

A. A large body of empirical research evaluates the effectiveness of disposable bag regulations using a *simple-difference* approach, which compares consumer behavior before and after a policy change. Rivers et al. review a number of these studies in a 2017 article, but they point out that the simple-difference approach may lead to biased estimates, because it does not account for confounding events that may occur simultaneously with the policy change.²¹ (An example would be a hypothetical shortage of the material needed to produce the bags.) Randomized controlled trials (RCTs) are the gold standard for determining cause and effect because they assign participants randomly into either a group that receives an intervention or a control group that does not; however, to our knowledge, no RCTs have been conducted in this policy area. In their absence, the difference-in-differences research design provides the most credible causal identification strategy for determining the effectiveness of disposable bag regulations. By comparing the behavior of a

community that is subject to a bag policy not only before and after a policy is established but also with a similar community that was not subject to the policy, the analysis controls for the influence of potentially confounding events.

- B. Anecdotal evidence indicates that in 2015, retailers in Honolulu County, Hawaii, behaved much the way Chicago retailers did after the implementation of a stand-alone ban on thin plastic bags, providing thicker plastic bags in lieu of thin plastic bags.³⁹ After San Francisco implemented a stand-alone ban in 2007, paper bag use increased more than fourfold,⁴⁰ which ultimately motivated a shift to a hybrid ban (one accompanied by a fee on other disposable bags) in 2012.
- C. In the study conducted in Richmond, California, Taylor and Villas-Boas also found that after the hybrid ban was instituted, the plurality of customers purchased 10-cent paper bags at the checkout, although customers shopping at a grocery chain that additionally sold thick plastic bags for 15 cents chose those bags and paper bags in roughly equal proportions.⁴

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