

Constructive not Destructive? A Cost/Benefit Discussion Case for the Tire Deflation Environmental Activism Initiative

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Abstract

Social media coverage of recent environmental activism protests has been extensive. But there have also been negative responses to these protests. So, what are the benefits of these protests? Are there corresponding costs? This article provides a cost/benefit discussion case of one such global initiative: tire deflation.

Keywords: cost/benefit, environmental activism, tire deflation, social media

1. Introduction

As Lynn entered her office Friday afternoon, she couldn't help shaking her head. How had a simple discussion over lunch ended up in a bet? While lunching with three other Business school faculty members, the discussion had turned to several current news stories. Lynn, a Supply Chain professor, asked "Did anyone see the story about the museum in London? Environmental activists threw soup on a masterpiece. Then glued themselves to the wall" (PBS News weekend, 12/10/2022). "Why?" asked Jack. An Economics professor, he wanted more details about the event. Emily, a Marketing professor, said the topic had come up in her marketing class that morning. "Those activists are demanding no new oil or gas licenses from the British government. They were outfitted in shirts proclaiming their membership in Just Stop Oil, an environmental activist group. Apparently, other groups have also undertaken similar actions to call attention to the issue. Mashed potatoes have been thrown across the works of Claude Monet near Berlin. And in Paris, the Mona Lisa was smeared with cake." (PBS News weekend, 12/10/2022).

"That's unfortunate" said Rob, an Accounting faculty member. "Was the painting greatly damaged? Did the museum staff clean it quickly?" asked Rob. "That would keep the restoration costs down." "Apparently", said Emily, "there was a protective case in front of the painting, so it wasn't really damaged. It did make a mess though." Rob then wondered whether the protestors had been arrested? "I assume they were arrested" said Lynn. "That information wasn't in the online story I read."

"Since students were talking about it in class, was it on social media?" asked Jack. "Yes" said Emily. "They claimed it was to call attention to the climate crisis." Lynn then stated "I remember a different group that would target SUVs and deflate all four tires. They posted their efforts on social media too." "I remember" said Jack. "I think they would target large cities and try to disable as many SUVs as possible, regardless of whether they were electric, hybrid or gas powered." Rob then added, "I read recently they changed their M.O."

Now they avoid hybrid, electric and handicapped-marked SUVs". (Curwin, 4/20/23). "Boy" said Rob, "it would really upset me to find four flat tires. Can you imagine?". Everyone agreed they could imagine the resulting annoyance. Then Lynn posed a question "You wonder if the activists could do something constructive instead of destructive? I know the deflated SUV tires gets media attention, but it also has costs for all the individual owners impacted. And does it actually alter behavior?" she wondered. This question prompted the others at the table to consider whether it likely did change consumer behavior, or if there might be an alternate approach that resulted in more specific, positive outcomes. So, the group decided they would each take a couple of weeks and try to identify the associated costs and benefits of the tire deflating activities. They would meet in the next few weeks and see if they could propose, individually or jointly, an alternate approach. An approach focused on constructive efforts to inform/educate/change behavior versus the destructive approaches that had prompted the discussion. The least persuasive approach from one of the four would have to buy a round of coffee for the others.

2. Discussion/Assignment Questions

1. Detail the likely outcomes associated with the tire deflation initiative. What are the costs incurred? What are the impacts on climate change? What would the societal impact be?
2. Think about alternative approaches to the tire deflation initiative identified above. Could environmental awareness be raised in a different way? What are the different options to combat CO2 emissions? What are the cost implications of these alternatives? Could these environmental activists achieve the same level of awareness with a constructive, not destructive, approach?

The following information and/or websites were identified by the four professors as useful. You may find them of interest.

3. References for case information:

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4. Teaching Note:

The following is a compilation of possible costs and benefits associated with the tire deflator initiative. The analysis is undertaken from an individual perspective.

While a few assumptions were necessary for the following calculations, I erred on the side of caution. With four deflated tires, driving the vehicle is neither safe nor smart. So, at a minimum, a tow truck must be called. Either the tow truck will have the ability to inflate the tires on-site or if not, will be able to tow the disabled vehicle to a repair shop for tire inflation. The average cost for a tow truck call ranges between \$75-\$125 (Homeguide.com). Further, a diesel tow truck emits on average 404 grams of CO2 per mile driven (Smoot 2022). So, assuming an estimate of twelve miles round trip, the tow truck emissions add 4848 grams CO2 to the environment. Now, the activists may have cycled or taken mass transit to the SUV attack location, but if a passenger vehicle was used, additional CO2 emissions occurred. Based on EPA estimates, and assuming fifteen miles round trip, a total 6165 grams of CO2 are emitted (EPA 2014). It is also safe to assume the victim with deflated tires would miss either work time or family time. This is harder to quantify but needs to be recognized. Consequently, a broad range of \$20-\$200 in cost was included. Finally, the resulting publicity associated with the SUV tire attacks is the final outcome of this initiative. While many would argue the benefit of calling attention to climate change, it must also be noted it could prompt additional destructive activities.

	Costs incurred:	Potential Climate Impact:
Travel by activist to location		411 grams CO2 per mile x 15 miles = 6165 grams CO2
Tow truck called to inflate tires	\$75 – \$125	Estimated 12 miles round trip at 404 grams CO2 per mile = 4848 grams CO2
Lost wages or lost family time (estimate 1-2 hrs)	\$20 - \$200	
Publicity via news stories and social media		Advantage: Calls attention to climate change issue Disadvantage: Might prompt additional destructive activities
Total:	\$95 - \$325	11,013 grams CO2 emitted

Since the environmental activists sought to emphasize the impact of SUVs on the environment, I considered ways to offset their impact while still highlighting the environmental message. According to several studies, planting trees is one means to remove CO2 from the environment (Cho 2018, EPA 2022). According to the EPA, a coniferous or deciduous tree planted in a suburban/urban setting can intake 23.2-38.0 lbs of carbon, respectively, over a ten-year period. While there is uncertainty in the calculation, like tree survival, tree growth, etc., even using this as a conservative estimate will work for our purposes. A quick Amazon search revealed individual seed prices from \$.015-\$.023 for some sample coniferous and deciduous tree species (see Figure 1). Obviously, the species selection would need to recognize geographic regions for viability. And assuming the Amazon shipment used regular postal delivery, there should be negligible CO2 emissions associated with the order. Finally, there may be more specialized and economical options for locally procuring tree seeds, eliminating the need for any shipment.

Perhaps the tire deflators could change their approach and leave 10 tree seeds in a recyclable envelope to protect them from weather. Then perhaps an alternate message could be attached. Something along the lines of “Your vehicle was targeted and we planned to deflate all four tires on behalf of environmental awareness. Instead, we ask that you plant one or more of the enclosed tree seeds to offset CO2 emissions from all vehicles, not just yours. In a single year, on average, a gas-powered SUV emits 4.7 metric tons of CO2 (EPA 2014, 2022). It will take 10 trees 10 years to remove 1/10th of 1 year’s SUV emissions (EPA 2014, 2022). If you are unable to plant them, please pass them on to someone that can make use of them. Thank you.” Even if only one seed is planted, the potential to offset some of the environmental impact exists. And if the SUV owners are grateful for the reprieve from the destruction and resulting inconvenience, they just might act in a positive manner. While this approach may not have the same dynamism as the original missive, it may result in a more positive environmental outcome.

Table 2. Outcomes with package of deciduous or coniferous tree seeds left on vehicle		
	Costs incurred:	Potential Climate Impact:
10 seeds of Fraser Fir	10 x \$.023 = \$ 0.23	Each tree can absorb 23.2 grams of Carbon over a 10 year period
10 seeds of Siberian Elm	10 x \$.015 = \$ 0.15	Each tree can absorb 38.0 grams of Carbon over a 10 year period
Reduction in CO2		0.6 metric tons for 10 trees over a 10 year period
Publicity via news stories and social media		Advantage: Calls attention to climate change issue & might prompt additional constructive activities
Total:	\$0.15 - \$0.23	0.6 metric tons CO2 removed from environment

There could also be legal consequences associated with some of these activist actions. In the case of tire deflation, assuming the perpetrators were identified, the SUV owner could sue based on negligence. This is true in Michigan, where this case originated. Obviously, legal consequences could differ in different locations. The SUV victim would need to prove damages, which may or may not merit the lawsuit. Criminal charges may also be possible. Or there is the risk of a “road rage” incident if the perpetrators were caught by the victim.



Figure 1. Example of a Deciduous tree and Coniferous Tree. (Left: Siberian Elm, 1,093 Tree Seeds for \$15.95 (approximately \$.015 per seed). Right: Fraser Fir, 1,750 Tree Seeds for \$39.95 (approximately \$.023 per seed).

5. References for teaching note:

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Siberian Elm information from Amazon, accessed 8/21/22 at https://www.amazon.com/pumila-Siberian-MySeeds-Co-Choose-Quantity/dp/B09NYK7R99/ref=sr_1_37?crd=5YH7EM5IXOYR&keywords=deciduous%2Btree%2Bseed%2Bpacks&qid=1661127851&prefix=ddeciduous%2Btree%2Bseed%2Bpacks%2Caps%2C94&sr=8-37&th=1

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