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Examining the Effects of Status Quo Bias on Household/Individual Carbon Consumption

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Abstract:

The research investigated the degree of influence status quo bias has on rising carbon emissions. It found that status quo bias strongly regulates the actions of households and individuals when making environmental decisions. Through transportation, individuals lack the incentive to switch to eco- friendly methods and display inertia to their original path. Consumption habits and market interactions also show individuals' reluctance to new technologies. Results show that the status quo bias plays a significant role as one of the fundamental causes of uncontrollable carbon emissions.

Keywords: status quo bias; carbon emissions; Carbon Consumption; individuals' and households' consumption behaviors; psychological

Introduction

Nowadays, increasing energy consumption engendered a significant rise in carbon emissions ubiquitously. As countries develop and urbanize, living standards rise, increasing energy consumption (Wu, 2021). In 2022, the US emitted 4,941 million metric tons (11 trillion pounds) of carbon, ranking second in carbon emissions globally (CIA, 2022). Compared with corporations and the government, households account for most of the 14 trillion pounds of carbon emitted through transportation and electricity use (EPA, 2024). Furthermore, households' carbon usage is expected to increase further, even faster than businesses and the government. Nonetheless, traditional economics focuses on mitigating the issue through a macro scale, such as price controls and tax cuts, which mainly target corporations. This behavior reflects a lack of attention towards micro policies, which control households and individuals, and illustrates the need to view carbon emissions through a micro-scale.

In theory, conventional economics assumes that people are rational decision-makers, but this hardly exists in reality. On the other hand, behavioral economics considers the irrationality in human beings, creating the need to involve behavioral economics when addressing the issue. In the status quo, energy consumers can be separated into three categories: corporations, individuals, and government. Of the three, individuals generate a substantial adverse impact through their irrational behaviors. Often, individuals demonstrate limited cognition and low self-control and rely on simple decision-making, thus producing energy efficiency gaps that trigger more waste. Accordingly, this reflects the irrational individuals' consumption habits and decision-making processes, which indirectly cause a rise in carbon emissions. As a result, these behaviors can be attributed to the status quo bias and default effect.

Status quo bias, a cognitive bias, reflects individuals' preference to maintain their current situation and resist opposing actions that may change it. Usually, the status quo or default is people's current baseline, and any shift in that would be perceived as a loss or risk. This bias prevents individuals from making rational decisions when facing complex situations and usually prompts them to take the self-comforting but irrational path.

At present, the status quo bias has heavily shaped people's lives regarding energy consumption from numerous perspectives: transportation-wise, market-wise, and purchasing-wise. Furthermore, the bias impedes individuals from consuming energy efficiently, leading to unnecessary carbon emissions. Predominately, households/individuals fail to realize their wasteful ways of consuming energy as they have formed habits already, illustrating an inquiry that must be contemplated. For instance, total electricity consumption is around 6% higher when the household head is status-quo- biased (Blasch & Daminato, 2020). As a result, the bias strongly prevents individuals from making rational decisions that help reduce carbon emissions.

Moreover, because of this bias, the government struggles to deliver policies regarding energy consumption (Lang et al., 2021). This bias provokes individuals to have negative feelings toward government policies that ask for change, which hampers the spread of critical environmental information. Hence, without regulations against individuals/

households, carbon emissions would continue to rise, accelerating climate change—an urgent issue that concerns everyone.

Application 1 (Transportation)

In the face of escalating carbon emissions, the significance of individual behavior in transportation choices rises accordingly. Transportation is essential in individuals' lives and cannot be abandoned. While the benefits are apparent, it has become one of the main factors speeding up climate change with its inevitable detrimental effects. Although the government and scientists constantly brought up precautions and ways of mitigating the impact, they misapprehended the problem for too long. One of the psychological phenomena that influences such irrational behavior is the status quo bias. In the context of transportation, this bias can manifest in various ways, such as transportation choices and aversion to new technologies.

One of the most conspicuous impacts of status quo bias is individuals' reliance on private transportation methods. Despite the rising awareness of environmental issues, many individuals still choose cars due to convenience and habits (Thogersen, 2021). This preference overlooks the environmental benefits of public transportation, such as lower carbon emissions and reduced agglomeration in urban areas. Furthermore, the status quo bias causes individuals to make high carbon emission choices, such as chronic motorized transportation for unnecessary distances (Thogersen, 2021). Many influenced by the bias exhibit inertia in their travel choices, refraining from more sustainable behaviors such as walking and cycling. Path dependency and inertia, both of which are part of human nature, are the leading causes of these status quo bias scenarios. Path dependency reflects the continued practice or use of certain products based on historical preferences (Banton, 2021). In reality, individuals choose a path at the start and prefer to stick with it. The selected initial path strongly influences individuals' future decision-making, causing them to revisit their initial thoughts when facing new ideas (Rosenbloom et al., 2019). Individuals tend to exhibit inertia that prevents them from switching when on a comforting path. In other words, individuals rely on transportation methods they are familiar with, mainly the ones they have used for the longest when making choices, and new alternatives tend to be ignored.

Secondly, individuals display negative feelings toward new technologies. Technological advancements like electric vehicles often offer promising alternatives to conventional transportation methods. Under government regulations, companies worldwide strive to produce more environmentally friendly methods that could help mitigate climate change. However, individuals perceive this shift in transportation methods as a loss or have skeptical views, as individuals may question their reliability and cost. As a result, most skepticism is formed based on the initial information individuals receive, which induces a decrease in the significance of subsequent information. This is because individuals are limited in their ability to process new information and would likely choose the easygoing path of relying on the initial information received (The Decision Lab, 2023). In this case, individuals tend to place more weight on their first method of transportation, which is also the status quo. When encountering alternative methods, individuals struggle to engage in a cost-benefit analysis; instead, they give up the alternatives entirely and rely on pre-existing beliefs (Hofmann, 2022).

Application 2 (Consumption Habits and Market Interaction)

Status quo bias also influences consumer choices and forms detrimental habits. This cognitive preference for maintaining existing conditions locks individuals into patterns of consumption and production that exacerbate carbon emissions. This bias is not merely an economic theory; they have tangible implications for how individuals interact with markets and make consumption decisions, collectively shaping people's ecological footprint. Specifically, individuals resist eco-friendly products and continue unfavorable spending habits, which inherently stops innovation in the market. Hence, the bias unnoticeably tears up the market and influences individuals onto a harmful path. This phenomenon of consumption habits and ways of production could be studied from a price and cultural perspective.

The status quo bias influences consumption habits by resisting the adoption of innovative products and services that could conserve the environment. This resistance is evident in consumer behaviors, such as the continued preference for conventional brands over new ones promoting green technologies. A study highlights that consumers' purchase behavior is significantly influenced by eco-friendly marketing. Still, the transition to eco-friendly products is slow due to barriers such as a lack of awareness and perceived higher costs of green products (Saeed et al., 2023). This suggests that even though consumers may express positive attitudes towards eco-friendly products, their purchasing behavior may still favor conventional brands due to deeply entrenched habits and the perceived risks of change.

The fundamental cause of this scenario is the price difference. Conventional brands and producers have the ability to produce at lower prices compared to innovative green

producers, which ultimately attracts more consumers. This is because individuals overweigh the high prices of eco- friendly products and disregard their environmental and long-term benefits. Predominately, individuals view the first price as the base price, which is also the status quo, and these base prices are primarily associated with high-carbon products. The status quo thus causes individuals to become exceptionally sensitive to future prices of similar products from eco-friendly brands. Later, when individuals are persuaded to switch, they display a lack of willingness due to the higher price of the new product than their original ones. Collectively, the status quo bias precipitates great emphasis on prices for individuals when choosing products, which attracts them to conventional, non-environmentally friendly brands.

Moreover, the "Green Economy Outlook: Sustainability Trends for 2024" report by JPMorgan Chase notes that while there is a significant opportunity for green-minded companies to innovate, most consumer-oriented businesses, including those in the eco-friendly sector, may face challenges in the market to do so (Cohen, 2024). This is attributed to the influences of culture, which shape market trends and individuals' consumption habits. For instance, Indigenous communities, which often have strong cultural ties to the land and sustainable practices, may struggle to adopt new methods due to the status quo bias if these methods are perceived as straying from traditional ways, even when faced with deforestation and degradation threats (Anita et al. et al., 2023).

Cultural influences are a major limiting factor preventing markets and consumers from changing. Cultural traditions are often deeply rooted in individuals' daily lives, making it difficult for them to abandon many of the practices. Individuals refer to their cultures as the status quo, and cultures tend to have a much more robust effect on individuals, counteracting changes or any actions/ideas against their traditions. Furthermore, these traditions also inevitably influence the market, especially conventional brands. For this reason, conventional brands dominate the market, building consumer

trust and reliance and discouraging developing and investing in more sustainable alternatives. As a result, this behavior impacts individual choices and shapes market trends where the demand for conventional products remains high. This undoubtedly hinders the market's ability to adapt and innovate, creating a cycle of production that is inconsistent with the urgent need for change.

Potential Alternatives

As the adverse impact of the status quo bias continues to rise, precautions should be taken immediately to mitigate the harm. Addressing the status quo bias is crucial for fostering a sustainable future regarding carbon and energy consumption. Policies combating this should examine the issue through a micro perspective, focusing on human behaviors and consumption habits and considering the psychological causes of such irrational behaviors.

Introduce energy labels:

Because energy consumers are influenced by heuristics, such as through prominent information or intrinsic emotional experiences, which simplify decision-making, implementing eye-catching energy labels on wasteful products would notably mitigate this issue. These labels would serve as prominent information that would compete with existing knowledge or be added as new information, thus complicating individuals' decision-making processes and obstructing heuristics.

Individuals would be more aware of the detriments of the products and services they consume, as the labels would supplement their decision-making with extra information that needs consideration.

Reconstruct information presentation:

Due to the status quo bias and loss aversion behavior among households, switching their default settings and framing novel information from a loss perspective would, in fact, use heuristics to counteract the issue (Kivisaari et al., 2019). Switching individuals' default settings refers to making the "green option" the default choice instead of conventional options, thus creating an anchoring effect. In turn, this is reinforced by consumers' tendency to rely on heuristics, forcing them to consider whether to opt out of the green option rather than join it (Ghesla et al., 2019). In addition, as the default option is reconstructed, framing new information from a loss perspective can further stimulate consumers' loss aversion psychology and promote the target behaviors advocated by low- carbon policies (Kahneman et al., 1991). This is because the bias describes loss as more prominent than gains, and they can evoke negative emotions that push individuals to choose the alternative.

Provide and spread normative information:

The most widely applied, significant, and researched "nudging" policy is spreading normative information (Nolan et al., 2008). Its main idea is to transform pieces of information into prominent and concrete social norms, which are rarely forgotten. The norms would reshape individuals' reactions to eco-friendly information and allow them to embrace green alternatives, and as the information normalizes, it gradually becomes the new status quo (Mitchell et al., 1985). To form normative information, providing mandatory educational and safeguarding programs would effectively enhance residents' energy literacy and spread new information to the public, accelerating its normalization.

Conclusion

To recapitulate, individuals' and households' consumption behaviors undoubtedly impact high carbon emissions, which inevitably tie with status quo bias. While people usually underestimate the harmful effects of such bias, it heavily influences our climate. Examining energy efficiency gaps through a psychological perspective brings unexpected findings and alternatives to mitigate this issue. While most people understand the causes of high carbon consumption - transportation and wasteful habits - they struggle to comprehend its fundamentals, which occur due to people's reliance on heuristics and biases. Thus, the status quo bias negatively shapes people's energy consumption methods through the perspective of transportation, market, and purchasing. The purpose is to shift governments' and authorities' stubborn mindset from a macro point of view to a micro one, aiming to mitigate the issue by fixing behaviors and habits rather than tax changes and corporate regulations.

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